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VOLUME XXVIII

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EDITOR AND BUSINESS MANAGER, H. B. COWAN
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TO THE DEAD YEAR

It seems but yesterday, and yet I know
  Thy smiles are dead, thy glories passed away!
Thy voice has left the earth where, to and fro,
  Death's children wander now in bare array.
One would not guess a thing had e'er been gay
  In fields or woods, where now the fall winds spread,
The leafless branches tossing in dismay,
  'Neath skies no longer blue, but dark with dread.

Yes, thou art gone! and yet a lesson rife
  With truths from Him thy death is meant to teach,
Like thine, the summer days of life
  Must fade, and age's winter come to each.
Do not the falling leaves these sermons preach,
  That hope is not a shield against decay?—
That time will soon the dreams of youth impeach,
  And write the summons none can disobey?
And yet thy death old year but makes it plain
  That though we die, we too, shall live again.

T. H. RACE.

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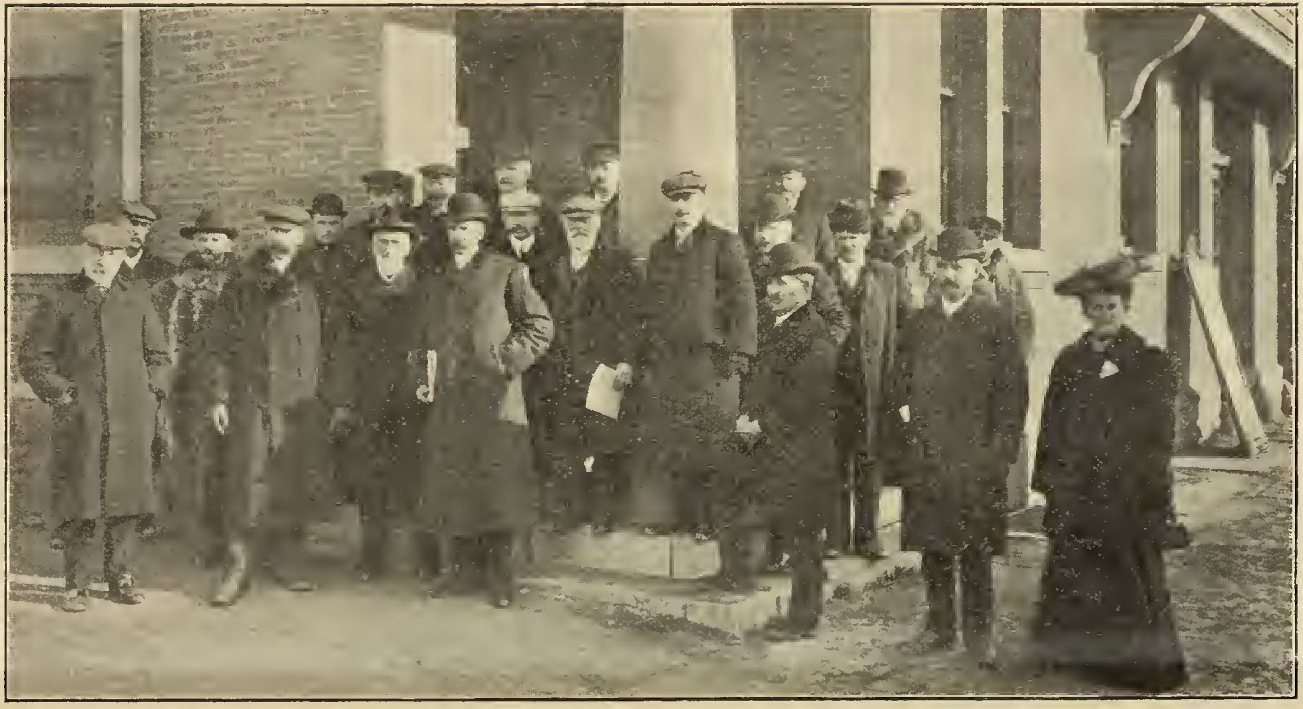

Nova Scotia Fruit Growers While in Convention at Windsor, N. S.

Between two of the sessions of the Nova Scotia Fruit Growers' Annual Convention at Windsor, N. S., a photographer secured this photograph, of some of the leading officers and members, specially for The Canadian Horticulturist. The gentleman leaning against the pillar and with a sheet of paper in his hand is Mr. Starr, who judged the fruit at the Provincial Fruit, Flower and Honey Show, in Toronto, during November. In front of Mr Starr, and also holding a piece of paper, is the new president of the association, Mr. Ralph S. Eaton; while the secretary, Mr. S. C. Parker, may be seen to the left standing next the lady. The convention was a pronounced success.

The Canadian Horticulturist

JANUARY, 1905

VOLUME XXVIII ✻ NUMBER 1

THE FRUIT SHOULD BE A SEPARATE DIVISION

IT has been announced in the press that the Dominion fruit division will shortly be placed under the control of the Dominion dairy division. This action is the result of the resignation of Prof. James W. Robertson as the Commissioner of Agriculture and Dairying. That the fruit growers of Canada are opposed to such action is evidenced by interviews secured by The Canadian Horticulturist with representative growers.

"Such action," said Mr. W. H. Bunting, of St. Catharines, the honorary president of the Ontario Fruit Growers' Association, and a prominent member of the Niagara Peninsula Fruit Growers' Association, "would be very disastrous to the fruit interests of Canada. Our fruit interests are important enough to have a footing of their own and should not be made subordinate to any other interest, no matter how important that interest may be. As fruit growers we feel that we should have the right, through the chief of our division, to go direct to the Minister of Agriculture. This right will only be assured us by the fruit division being recognized as a division by itself, with its head responsible only to the Minister of Agriculture. I am satisfied that any such action will be strongly opposed by fruit growers generally, and would like to see the views of the growers laid before Hon. Sydney Fisher in time, if possible, to prevent the proposed amalgamation."

Mr. Murray Pettit, of Winona, a director of the Ontario Fruit Growers' Association and president of the Niagara District Fruit Growers' Stock Co., Limited, said: "It is decidedly in the interests of fruit growers that the fruit division shall be continued as a division by itself and not amalgamated with any other division. The fruit interests are of great importance and are increasing in extent very rapidly. As fruit growers we feel that these interests will be best served by being directed solely by a person who represents the fruit interests, this person to be directly responsible to the Minister of Agriculture and to no other person. Fruit growers generally are of this opinion and are strongly opposed to any action that is likely to affect the value of the work of the fruit division or that will restrict its operations in any way."

One of the largest fruit growers in Canada, Mr. E. D. Smith, of Winona, was equally emphatic in his views as expressed to The Horticulturist. "The fruit interests," said Mr. Smith, "while not as important as the dairy interests, are of sufficient importance to be entitled to a division independent of any other. When we make suggestions to the head of the fruit division we do not want to feel that these suggestions must in turn be submitted for approval to the head of some other division, who is in no way interested in fruit, before action can be taken. If it is proposed to combine these interests no action should be taken until Parliament meets, when this matter may be thoroughly considered. As a fruit grower I will strongly oppose any fusion of the fruit and dairy divisions and I am satisfied that other fruit growers feel the same way."

As will be seen in another column the Prince Edward Island Fruit growers, at their annual convention during the third week of December, passed a resolution unanimously opposing the proposed union of the two divisions, the opinion being freely expressed by those in attendance that such an amalgamation would likely prove disastrous to the fruit interests of Canada.

A leading Ontario fruit grower, speaking to The Horticulturist, stated that were the dairy and fruit divisions joined, with the chief of the dairy division as the superior officer, it would simply mean that the fruit interests of Canada would be the tail of the dairy kite. Owing to lack of space, The Horticulturist is unable to give the views of more growers on this subject, but can state that every fruit grower heard from is thoroughly opposed to the proposed combination of the two divisions.

PRINCE EDWARD ISLAND FRUIT GROWERS' PARLIAMENT

MATTERS of great interest and importance to the fruit growers of the Dominion as well as of Prince Edward Island were dealt with at the ninth annual convention of the Prince Edward Island Fruit Growers' Association held at Charlottetown December 20 and 21. The Fruit Growers' Association is the most vital of all the garden province's organizations and keen interest was, therefore, manifested in the subjects discussed.

Several important decisions were reached. It was resolved to ask the Dominion Minister of Agriculture to place fruit commission merchants under Dominion regulation; to give inspectors under the Marks Act right of control in loading apples on shipboard; to put express companies under the jurisdiction of the railway commission; to ask for government assistance to inaugurate co-operation; to recommend the purchase of a full line of horticultural implements for the experimental farms; to urge the convoking of a National Fruit Growers' Council; and, to make The Canadian Horticulturist the official organ.

AN IMPORTANT RESOLUTION.

The following resolution, which was adopted unanimously, was recognized to be of great importance. In passing it the growers felt assured of the support of the great body of the fruit growers throughout the Dominion. This resolution read as follows:

"Whereas it has come to the knowledge of this association, through the press, that an amalgamation of the Fruit with the Dairy Division of the Department of Agriculture, Ottawa, is in contemplation; therefore it is resolved that this assemblage of the fruit growers of Prince Edward Island do respectfully express to the Honorable the Minister of Agriculture its unqualified disapproval of any such amalgamation as detrimental to the large and increasing horticultural interests of Canada, which call for extension in their central offices rather than restriction."

THE CONVENTION A SUCCESS.

Much of the credit for the decided success of the convention is due the president of the association, Rev. Father A. E. Burke, of Alberton, who was unanimously re-elected as president amid much enthusiasm. Rev. Father Burke's sympathy with the agricultural interests and splendid powers of direction are known and appreciated and perhaps more thoroughly without his own province than within, although his leadership is there universally admitted. The manner in which the meetings were managed and the enthusiasm and spirit of enquiry they aroused was most noticeable. Nothing but questions of vital interest were considered, and they were discussed so thoroughly as to give general satisfaction.

The principal speakers were Messrs. Alex. McNeill, Chief of the Fruit Division, Ottawa; Mr. W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa, both of whom are very popular with the Island's fruit growers; Saxby Blair, Horticulturist, Nappan, N. S., and G. H. Vroom, D. F. I., of Middleton, N. S., who are becoming noted in the Maritime Provinces as horticultural authorities. All the speakers gave splendid satisfaction. Mr. McNeill spoke on "Varieties in Canadian Orchards," "The Fruit Marks Act" and "Cooperation"; Mr. Macoun, on "Guides to success in fruit culture," "The work at the Farms," "Strawberries," and answered many interesting questions in the question box.

The president's address was one of those comprehensive reviews of the horticultural situation for which Father Burke is noted. Its salient note was the one advocating co-operative packing houses for the Island where the grading, packing and storing of apples would be done, as well as jamming, canning and evaporating. Attention was drawn to the value of a Canadian congress of fruit growers. A touching moment was reached when the president asked the assemblage to stand and attest its condolence with the families of the members who died during the year.

Among the subjects on the program, all of which proved interesting, were: An address by Dr. Fletcher, of the Central Experimental Farm, Ottawa; Pollination of Apple Blossoms, T. Ross, B. A.; Cranberry Culture, C. R. Dickey; Commercial Orcharding, Senator Ferguson, who is a most enthusiastic fruit grower; Plum Culture, D. J. Stewart; Some Difficulties of Island Horticulture, John Johnstone, and Further Notes on My Experimental Orchard, W. C. White. Demonstrations were given by representatives of the Dominion Fruit Division of the proper grading, packing and marking of fruit for the home and export

Fruit Exhibit at the Recent Convention of the Nova Scotia Fruit Growers' Association.

(Photograph taken specially for The Canadian Horticulturist.)

trade. Several of these papers will be published in The Horticulturist.

Among the prominent people at the convention were: Senator Robertson, the Lieutenant Governor, who attended two sessions and spoke twice; Mayor Kelly, Alex. Martin, J. J. Hughes, M. P., and others.

(Continued on page 39.)

NOVA SCOTIA FRUIT GROWERS ARE WIDE AWAKE

THE annual convention of the Nova Scotia Fruit Growers' Association was held at Windsor, N. S., during the week of December 5. Fine addresses were presented throughout the sessions, a large number of interesting and profitable subjects being discussed by experts in various lines.

The fruit exhibits were one of the best features. The Ontario exhibit was the same as shown at the Toronto Industrial Exhibition, it having been placed in cold storage immediately after that exhibition. A very creditable display was made from Prince Edward Island, consisting of 18 different varieties, while British Columbia was represented by four varieties. The New Brunswick exhibit, unfortunately, went astray while in transportation. About 20 varieties of Nova Scotia apples were displayed, making the finest collection on exhibition. The Elwanger & Barry Nurseries, of Rochester, N. Y., showed the best collection of pears ever exhibited at Windsor.

The officers chosen at the convention for the ensuing year were: President, Ralph S. Eaton, of Kentville; vice-president, John Donaldson, Port Williams; secretary, S. C. Parker, Berwick, and treasurer, G. W. Munro, Wolfville. The treasurer reported a balance on hand December 1, 1904, of $1,893.36, which with the government grant added gave the society a balance of $2,100. The secretary explained that $750 was received for the Horton school equipment, when it was turned over to the new government college at Truro.

The president, Mr. Ralph S. Eaton, gave an interesting address. "The past season," he stated, "was a rather discouraging one to Nova Scotia fruit growers, following, as it did, the best year they have ever had. The spring of the year opened with marked freedom from diseases in orchards of any kind. Until nearly the middle of June the weather seemed so like that of the previous year, most growers sprayed only once, hoping for a duplicate of the season of 1903 in regard to the quality of their fruit. However, the black spot made a fearful inroad, especially in the greater part of King's county, more particularly on Gravensteins, Spys, Ben Davis, Baldwins, Russetts, and others. The action of the government in sending, as an object lesson, a power sprayer into the section was a commendable one." As the experiment cost the government but little, each orchardist having paid five cents for each tree sprayed, Mr. Eaton expressed a hope that the experiment will be repeated. A thoroughly successful trial in Hants, King and Annapolis counties, he believed, would be worth thousands of dollars to the industry.

The quality of the fruit this year has not alone been disappointing. The first of July the crop promised even heavier than last year, the largest record being 600,000 barrels, but on account of dropping of the fruit in the summer, lack of size and discount in quality, it is doubtful if Nova Scotia shipped half that number this year. The plum crop was rather light, and peaches were practically a failure.

AN IMPORTANT MOVE.

The association took the initiative some six years ago in moving for the federation of the schools of agriculture and horticulture into a provincial college. Circumstances led to the establishment of an institution at Truro the past summer. An experiment is again being made with a sailing vessel for the ocean freighting of some apples by the loading of the barque Skola at Wolfville. The condition of the cargo on arrival is watched with interest. Referring to future business Mr. Eaton stated a retrospective glance might be in order. In 1897 President Bigelow said, "The time has come when we must base our calculations for apple crops at not over $1 per barrel." Not until this year has the price approached this figure, and even this year, with a big crop in all apple countries, the buyers did not give more than $1.25 to $1.50 per barrel.

(Continued on page 44)

A FAR NORTHERN FRUIT EXPERIMENT STATION

AUG. DUPUIS, DIRECTOR FRUIT EXPERIMENT STATIONS FOR QUEBEC.

THE fruit station established at Gaspe Basin, Gaspe county, Quebec, by the Quebec government in 1898, on the farm of Mr. Wm. Clark, has been successful beyond my expectations. The orchard comprises two and a half acres and is a most healthy and vigorous condition. The apple trees bear good crops of fine apples of the following varieties: Yellow Transparent, Tetofsky, Duchess of Olds, Alexander, Wolf River, Wealthy, and English Golden Russet. The Yellow Transparent is a fall apple, while the Duchess, a winter apple, keeps till February. The Wealthy is a late winter. Downing gooseberries and Cuthbert raspberries yield great crops.

The orchard is protected from the great winds of the gulf by a hill, and from all sides by rows of deciduous and evergreen trees planted as wind shields. In plums the little Mirabelle (of France) and the Reine Claude de Montmorency (of the island of Orleans, near Quebec) are the only two varieties that have thrived when grown on their own roots and not grafted. As this orchard is in nearly the 49° of latitude, it is, I believe, the most northern fruit plantation on the continent.

Two thousand apple root-grafts of the above named varieties planted in nursery rows in 1900 have grown and prospered. Not quite 20 per cent failed. Mr. Clark sold most of the trees last year to farmers in the neighborhood, teaching them how to cultivate the trees and how to protect them.

This successful experiment in the far north has induced Mr. Henri Menier, of France, to experiment on a large scale on the island of Anticosti. He bought fruit and ornamental trees last year at the Village des Aulnaies Nursery to the value of over $1,000, and will spare no expense to obtain success in his experiment. Trees bloom in Gaspe by June 20.

THE SCARLET CRANBERRY. I was interested in the notes on the Cranberry Pippin apple which appeared in the December issue of The Canadian Horticulturist. Have any of your readers made a comparison between the Cranberry Pippin and the Scarlet Cranberry? I would greatly appreciate information in regard to the origin and chief characteristics of the Scarlet Cranberry.—(S. A. Beach, Horticulturist, Geneva Experimental Station, N. Y.

The sulphur, lime and salt wash, **full** strength, California formula, thickened to the consistency of cream, with fresh cow dung, I find an almost sure remedy against mice. Put it on with a whitewash brush. —(S. J. Rutherford, Quebec.

QUEBEC FRUIT GROWERS IN ANNUAL CONVENTION

HAROLD JONES, MAITLAND, ONT.

THE twelfth annual winter meeting of the Quebec Pomological and Fruit Growing Society, from the point of value, was one of the most successful in the history of the society. The meetings took place December 14 and 15 at Ayer's Cliff, Que. The speakers had been carefully chosen and were men well qualified to deal with the topics under discussion. Their addresses were selected with careful consideration to their special value to the Quebec fruit grower and farmer.

It is to be regretted that a larger number of the farmers around Ayer's Cliff did not avail themselves of this excellent opportunity to receive information on fruit growing. Those who did attend could not but appreciate the effort made to make the meetings both beneficial and entertaining.

Owing to press of business, Mr. Norman E. Jack, president of the society, was not able to attend, but the able vice-president, Mr. Fisk, of Abbotsford, warmly welcomed everybody to the meetings. A valuable paper on Cauliflowers and How to Grow Them, was given by Mr. R. Brodie, of Westmount, Que. This paper is published in full in this issue of The Horticuluturist.

Mr. W. T. Macoun, Horticulturist, Experimental Farm, Ottawa, followed with an exhaustive and valuable paper on the cultivation of potatoes. An extract from this paper is also published in this issue of The Horticulturist. The discussion brought out the fact that early and frequent spraying with Bordeaux mixture and paris green easily doubles the crop and that the perfect beetle and hard shelled bug does not do much if any damage. If the larvae or slug is killed when young the crop will not be injured.

Prof. G. Reynaud, Horticulturist, La Trappe, Que., spoke in French on some causes of unsuccessful fruit culture. His remarks were listened to with a great deal of interest by those familiar with the language.

A practical address on fruit growing in connection with general farming was given by Mr. Harold Jones, of Maitland, Ont., whose remarks caught the attention of the meeting and led to a lively and interesting discussion. This address will appear in the February issue of The Horticulturist.

Prof. Waugh, of the Massachusetts Agricultural College, Amherst, Mass, as is always the case, was the life of the meeting. He gave a valuable talk on dwarf trees, their uses, propagation and management. The pleasure and profit that may be derived by growing apples and pears in large quantities on small areas was clearly shown. The quality of the fruit is superior to that grown on standard trees of the same variety. Dwarf trees come into bearing at from one to three years after grafting, which makes them valuable to plant between standards while waiting for these trees to come into bearing.

AN EXHIBIT OF FRUIT.

On the fruit tables were shown about 80 plates of apples. It was a surprise to the visitors from Ontario to see such fine samples and also to see such varieties as King, Spy and Ben Davis grown to perfection. Mr. Fisk, of Abbotsford, exhibited 10 plates, among which were very fine samples of Lawver, Ben Davis and Fameuse. Mr. J. B. Edwards, of Huntington, had 15 plates, which won him much credit, his Wolf River, Spy, King and Johnathan deserving special notice. Six plates, with some very fine specimens of Kings, were shown by Mr. Brodie.

Other exhibitors were Messrs. Asa Johnston, 16 plates, including fine specimens of Bethel, Spy, Baxter, Edghill and Fameuse; Wm. Craig, winter sweet crabs and some fine cranberries; and Mr. Rowell, 15 plates of fine Wealthy, Wolf River and Nodhead.

Ralph S. Eaton, Kentville, N. S.

The new president of the Nova Scotia Fruit Growers' Association, Mr. Ralph S. Eaton owns probably the largest orchard in Canada. It contains 25,000 trees, including 15,000 apple, 6,000 plum, 2,000 cherry, 1,000 peach, 500 pear, and 500 apricot and quince. A view of a section of this orchard appears on the front cover of this issue. A description of Mr. Eaton's orchard and methods will be published in an early issue of The Horticulturist.

Messrs. Hichcock, Carter, Peck and Prof. Macoun also exhibited plates of fine apples, principally of the varieties mentioned above, with the addition of Milwaukee, La Victoire and Canada Baldwin, all of them being varieties of promise.

The directors, reporting for their several divisions, stated little or no planting was done during the past year. The only insect of note was the railroad worm, which caused some damage in Mr. Shepherd's orchard, and others adjoining, near Como, Que. The spot injured some Fameuse, but the damage was not serious. No spraying was done in the majority of orchards, but those that did spray were satisfied with the results.

Prof. W. M. Munson, of the University, Orono, Maine, lent his valuable aid by giving an address, Horticultural Education. The value of practical education in connection with science was pointed out, and that nature study is one of the most important links in agricultural training. In the past there has been too much luck and not enough intellect in farming. Nature will do a certain amount by herself, but it rests with man to enhance the production. Colleges are maintained to help get the boys and girls of our country out of ruts.

The afternoon session of the last day was given over to Messrs. J. F. Scriver, Fruit Inspector; F. L. Kenny, of South Hero, Vt., and Harold Jones, of Maitland, Ont. Mr. Kenny held his audience with an able address on fruit growing compared with other farm pursuits. This led to an informal and interesting discussion.

Thursday evening brought out a paper by Mr. W. H. Dempsey, of Trenton, Ont., which dealt with the question of fruit growing for profit. This address was listened to with the closest interest and attention, as those present knew they were listening to one of the largest and most successful apple growers in the province of Ontario and that every word he uttered was worth listening to. A copy of this address will appear in a later issue of The Horticulturist.

The meeting closed with an address by Mr. J. C. Chapais, St. Denis, Que., who told the fruit growers in Quebec what he saw and heard at the Fruit, Flower and Honey Show in Toronto, Ont., in November, and his able account convinced those present that he was endowed with a wonderful pair of eyes and ears combined with a conceptive and ready mind.

In travelling over this section of the province one is astonished that there are so few orchards when there are so many suitable locations available for planting. Many eastern farmers are, thereby, denied this health-giving fruit or obtain it at a cost much greater than the cost of production. —G. H. Hutton, Grenville county.

ORCHARD MANAGEMENT IN NEW ENGLAND*

PROF. W. M. MUNSON, UNIVERSITY OF MAINE.

THERE are certain general factors which control orchard management in all countries. Briefly summarized, they are: Tillage, fertility, pruning, varieties, propagation and parasites.

The soil is a storehouse for plant food, and the object of tillage is to make this food available. For this purpose the physical condition, or the texture of the soil, is of the greatest moment. Most soils contain an abundance of plant food if the soil particles are sufficiently minute to allow the roots to lay hold of this food readily.

Plants take their food only in the form of solutions, which are absorbed by the root hairs, carried up through the tissues of the plant to the leaves, where they are digested; after which they are returned for the building up of the tissues and the formation of fruit buds. The root hairs lay hold on the film of moisture which surrounds each particle of soil, rather than upon the free water between the particles. For this reason it is of the greatest importance that the number of particles be as great as possible, thereby greatly increasing the area from which the food may be obtained.

Water which falls during the growing season is entirely inadequate for the growth of plants during that season, hence it is important that some provision be made for storing moisture which falls at other times. This can best be done by making the soil loose and porous, that it may act in the same way as does a sponge.

Besides providing a storage reservoir for moisture, it is necessary to prevent, so far as possible, the natural evaporation, in order that the water with the plant food in solution, may be forced to escape through the medium of the desired plants. The appearance of grass growing by the side of an old log or stone, as compared with that at a little distance away, is a good illustration of the value of a mulch in conserving moisture. The best mulch or blanket for this purpose is a thin covering of dry earth, such as is provided by shallow cultivation.

THE FERTILITY FACTOR.

The value of tillage in aiding chemical processes by warming the soil, admitting oxygen and decomposing organic matter, is self-evident, and a simple statement of fact is sufficient. Any land which will grow good farm crops will maintain a fruit plantation, but profit in fruit growing lies in securing superior quality. The amount of plant food to be added in any given case will depend on the amount of increase of profit which will result from such treatment. The successful merchant is the one who forces trade. The successful fruit grower is the one who produces the best and finds a market for it.

To get the best results keep the land at work. Weeds do not run out the land, but they use plant food for purposes which are not desired. The best treatment for weedy land is to give it thorough cultivation and to use more plants of a desirable character. The weedy farm is, as a rule, a poorly farmed farm.

THE PRUNING FACTOR.

A tree is essentially a colony of individuals among which there is a constant struggle for existence. If left to nature the strongest, or those having the best position on the tree will survive, but to get the most satisfactory results the orchardist must prevent this natural struggle and give those branches which he desires to favor a better opportunity for life. The cutting of large limbs is not necessarily injurious to a tree, but it is advisable to go through the orchard every year and thus, as far as possible, avoid the necessity of removing large limbs.

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* Abstract of an address delivered at the annual winter convention of the Quebec Pomological and Fruit Growers's Society, held at Ayer's Cliff, Que., Dec. 14 and 15.

Pruning may actually stimulate the growth of trees by throwing the vitality into the remaining branches, exciting a more vigorous growth and in turn causing a reflex action on the growth of the roots. Many trees, if left to themselves, will over bear, and the removal of some of the branches may often be one of the best methods of thinning the fruit. The time and method of pruning will depend on the purpose in view, whether for shape, for increased growth, or fruit.

One of the most important elements in the value of pruning is that the owner is thus brought into closest contact with his plants. The true lover of plant life shapes and cares for his plants as thoughtfully and works out his ideals as carefully as he would train and guide a child.

Within the past few years there has been a marked advance in the interest and attention given to orchard management throughout New England. Many of the most extensive growers are practicing cultivation and the use of cover crops, while the value of spraying as a means of destroying insect and fungus enemies is recognized.

One of the most serious problems which confront the New England orchardist is that of the apple maggot, or trypeta. Orchardists are united, however, in the belief that the faithful destruction of windfalls, and all affected fruit, will result in reducing the loss from the pest. For this reason many growers favor the use of hogs in the orchard. An advantage claimed for hogs is that, in addition to destroying the pest referred to and adding to the fertility of the land, they serve a very important purpose in the way of cultivation. Important object lessons in the renovation of orchards, by the use of hogs, even in the absence of an application of specific fertilizers, may be seen in many of the orchards in Maine.

At the Maine Agricultural Experiment Station an important investigation as to the relative merits of cultivation as compared with mulching the trees, and also the relative merits of commercial fertilizers and barn manures, is being conducted. The results of this work thus far indicate a decided advantage in favor of treatment by cultivation.

The leading commercial apple in the orchard centers of Maine is the Baldwin; although Tolman, R. I. Greening, Roxbury Russet, Northern Spy and Ben Davis are received with favor by many. There is a general belief that the Baldwin gives the most satisfactory results when top grafted on some stock of known hardiness, while some would use native seedlings. There is probably no doubt that some strong growing variety like Tolman, Northern Spy or Stark is to be preferred, because of the lack of uniformity among seedlings.

There is a strong tendency to increase the planting of orchards in Maine and to more fully enter into a friendly competition with our Canadian friends in supplying the markets of the mother country. We must admit, however, that Canada is very much in the lead in so far as the control of the marketing is concerned, and it is to be hoped that New England will profit by the experience of Canadian growers.

There is plenty of room in eastern Ontario for the development of the fruit industry both for immediate consumption in the homes on the farm, and as a means of materially increasing the farm revenue.—(G. H. Hutton, Grenville county, Ont.

A Rack for Hauling Apples.—Do you of the readers of The Horticulturist know of a convenient rack for hauling apples packed in barrels? A subscriber would like to read a description of one with, if possible, a diagram drawing.

TESTING SULPHUR WASHES ACROSS THE LINE

PROF. LOCHHEAD, O. A. C., GUELPH.

MESSRS. Parrott and Sirrine, of the Geneva Agricultural Experiment Station, made three experiments in three different orchards to determine the effect of fall applications of various sulphur washes upon fruit and leaf buds, and the comparative values of these sprays for the San Jose scale treatment. The results obtained in these orchards were not alike and showed considerable variation in the effect of the treatment upon leaf and fruit buds.

In orchard No. 1 the average loss of blossoms on the peaches was 72 per cent., on the plums about 83 per cent. The loss of leaves on the peaches was about 68 per cent., and on the plums about 58 per cent. In orchard No. 2 the plum blossoms were reduced by 10 to 50 per cent., with slight edgery of the foliage. In orchard No. 3 the sprayed trees were unaffected by treatment, and, in fact, they showed increased vigor.

THE WASHES WERE EFFECTIVE.

With regard to the relative effectiveness of the different washes it may be said that all the washes tested proved effective. The experimenters make the statement that "the washes which are well suited to the needs of the average orchardist are the lime-sulphur wash, boiled by fire or by steam, and the lime-sulphur salsoda wash, prepared without external heat." It would appear, therefore, that further experiments are necessary to prove definitely whether fall spraying is likely to be followed by injury to the trees. It may be added that in some experiments carried out by one of our Ontario fruit growers in the Niagara district the autumn spraying was decidedly injurious, not only to the blossoms and leaves, but to the limbs.

The Entomologist of the Connecticut Experiment Station, Mr. Britton, reports that he sprayed 800 trees in December as an experiment; and as a result of this experiment he is able to state that fall or early winter spraying gives good results. Both boiled and unboiled mixtures are used. He also states that the boiled mixture of lime and sulphur, using as much or a little more lime than sulphur is probably as effective and as inexpensive as any mixture for the ordinary orchard work. Of the mixtures made without boiling he finds that the potassium sulphide and lime is an excellent one for a few small trees and shrubs, but is rather expensive for spraying large trees, and that the lime-sulphur and sodium sulphide mixture is a promising one, worthy of further trial, and giving good results

DISEASES OF PLANTS AND TREES

FRANCIS WAYLAND GLEN.

ARE trees and plants subject to the attack of malignant, contagious, epidemic diseases similar to such as cause the death in large numbers of men, women and children? My answer is: Yes, and I will give one of many facts I have learned from personal contact with trees and plants when attacked by such diseases. Between 1852 and 1858 cholera was prevalent in a certain section of Rochester, N. Y. The neighborhood was badly drained and otherwise in an unsanitary condition, and the people used stimulants freely. As many as 50 persons died in a short time.

The same year we had a block of pear trees budded on Angiers quince stocks which we imported from Paris. They were very strong and vigorous. The land upon which we planted them was low, and the soil composed chiefly of decayed vegetable matter, and not well drained. When the buds were one year old a large percentage of them were six feet high. The next year we cut them down as usual to force them to form branches, and at the end of the two years the majority of the trees were 6 feet high. I had occasion to go through the block daily to cut branches off for budding on quince stock.

In August I discovered one morning that some trees, which, the day before were perfectly healthy, had turned black, the sap in the body had also turned a dark color, and the trees gave out an unpleasant odor. I cut every one of them out and burned them, assuming that the disease was contagious. Every night and morning I went through the block removing every diseased tree, and before the epidemic passed I cut out at least 2,000 trees out of the 5,000 in the block.

In the same year I had another block of pears on quince, the same age, but on well drained ground, which was not so rich. These trees made a growth of three and a half to four feet in the two years. The two blocks were within 1,000 feet of each other. There were very few deaths in the well-drained block. I had the same experience with plum trees.

LATEST RESULTS FROM SPRAYING FOR SAN JOSE SCALE*

PROF. R. HARCOURT, ONT. AGRI. COLLEGE, GUELPH.

DURING the season of 1897 the San Jose scale was first discovered in the orchards of Ontario. Since that time the scale has caused serious damage and loss, especially to the owners of peach orchards; but, thanks to the energetic manner in which the matter was taken in hand by the Department of Agriculture, we are now able to say that methods for the controlling of this pest have been devised and are in operation and that the majority of the fruit growers recognize that the scale may be controlled and the vigor of an orchard maintained independent of its surroundings. It may not be possible to entirely eradicate the scale, and, like the potato bug, it may always be with us; but, just as the proper use of arsenical poisons may be used to control the latter, so the lime-sulphur wash may be used for the former and with equally good results.

One pleasing feature in connection with the application of the lime-sulphur wash is that it has greatly benefited the trees in other ways. To ascertain whether it is possible to still further cheapen and simplify the preventives for the scale the following experiments were undertaken:

In reporting the latest results from spraying for San Jose scale, I wish first to draw your attention to the trial of the relative efficiency of the lime-sulphur wash and the McBain Mixture. This test was made in the orchard of Mr. Bunting, St. Catharines, and under the auspices of a special committee appointed by the Fruit Growers' Association. The orchard selected consists of 65 thrifty growing but badly infested peach trees. Before the spraying was done each tree was carefully examined by Messrs. Bunting, Thompson and Healey, the members of the committee, and by Prof. Lochhead, and full notes were made regarding the condition of the scale on each tree.

Every other row was then sprayed with the lime-sulphur wash, and the intervening rows with the McBain Mixture. The application of the former was attended to by Mr. Bunting and of the latter by Mr. McBain. Both men were allowed to make the spraying as thorough as they saw fit, but nothing further was to be put on the trees until after they were examined by the committee. The lime-sulphur wash was the same as was being sold in the neighborhood at 90 cents per barrel, and the McBain mixture cost $2.50 a barrel.

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* A paper read at the Annual Convention of the Ontario Fruit Growers' Association during November and which was crowded out of the December issue owing to lack of space,

The trees were carefully examined by the committee about the middle of July and again about a month later, and later still by Prof. Lochhead; and the general opinion was that there was practically no difference in the efficiency of the two remedies. The cost of the McBain mixture, however, practically put its use out of the question, unless it was for a few trees where the lime-sulphur wash could not be procured.

OTHER WASHES TESTED.

The same day a barrel of the lime-sulphur and sal soda and a barrel of the lime-sulphur and caustic soda washes were prepared and applied on the trees of an adjoining orchard which were also badly infested with the scale. The former wash is one recommended by Dr. E. P. Felt, State Entomologist, New York. His formula and directions for preparing the mixture are as follows: Lime, 25 pounds; sulphur (flowers), 20 pounds; sal soda, 12½ pounds; water, 1 barrel. "Put 5 or 6 gallons of hot water in a wooden barrel, add the lime, quickly following with the sulphur and sal soda, and stir until the slaking is practically completed. It may be necessary to add a little cold water at intervals to keep the mixture from boiling over. After the violent action has ceased, cover the barrel to retain the heat and allow it to stand 15 to 30 minutes, dilute to the full quantity and apply." In our preparation of this wash we first stirred the sulphur into the hot water and then added the lime and sal soda.

The lime-sulphur caustic soda was originated with the Geneva Experiment Station, New York State. The formula and directions for preparing the wash are as follows: Lime, 30 pounds; sulphur (flowers) 15 pounds; caustic soda, 4 to 6 pounds; water, 1 barrel. "In preparing the wash, the lime was started to slake with six gallons of water, and while slaking, the sulphur, which had just previously been made into a thin paste with hot water, was added and thoroughly mixed in with the slaking lime. To prolong the boiling of the wash, the caustic soda was then added with water as needed, and the whole mixture was kept thoroughly stirred. As soon as the chemical action had ceased the required amount of water was added, when the mixture was ready for use. Aside from the heating of the water, the cooking of the wash was done in a tub or barrel, and took from ten to twenty minutes. In some preparations, especially when hot water was used to start the slaking of the lime, not all of the stated amount of caustic soda was employed, but six pounds was the maximum."

In preparing this mixture we followed the same plan as mentioned with the former wash. The sulphur was first stirred into hot water and then the lime added. When the boiling ceased all the caustic soda was put in at once. The whole was thoroughly stirred to prevent caking on the bottom of the barrel. The caustic soda should be used in the granulated or powdered form to insure the best results.

WHERE THE TESTS WERE MADE.

Both the washes developed the characteristic color of the well boiled lime-sulphur combinations, and those present were delighted with the simplicity of the method of preparation. These washes were made and applied in the orchards belonging to the following gentlemen. Careful notes were made on the condition of the trees before the wash was applied. The orchards and tests were: Mr. Geo. Robertson, one barrel of lime-sulphur and sal soda, only two trees badly infested; Mr. W. C. McCalla, one barrel of lime-sulphur and sal soda, trees badly infested; Mr. Greffith, one barrel lime-sulphur and sal soda, one tree particularly badly infested; Mr. W. H. Secord, one barrel of each wash, trees all infested, worst ones marked; Mr. Tittrington, one

S. C. Parker, Berwick, N.S.

Much of the success of the work of the Nova Scotia Fruit Growers' Association has been due to the energetic and capable work of its officers, of whom one of the best is the secretary, Mr. S. C. Parker. At the December convention of the association Mr. Parker was unanimously re-elected secretary.

barrel of each, trees badly infested; Mr. McArdle, one barrel of each, trees badly infested.

These orchards were visited in July and August by Prof. Lochhead, J. Fred. Smith, Robt. Thompson, P. W. Hodgetts and myself, and in every case little or no difference could be seen in the amount of living scale between the trees sprayed with these mixtures and those on which the boiled lime-sulphur washes had been used. Some of the members of the committee were inclined to think that the mixture containing the sal soda gave rather better results but there was very little difference.

Of this season's work Dr. Felt reports to the effect that excellent results were obtained from the use of the lime-sulphur and sal soda mixture. The Geneva Experiment Station workers state that the results obtained from the wash were good, but not uniform. At the New Jersey Experiment Station, Prof. Smith reports that this wash has been quite effective, but that it is not so good as the bottled mixture and costs a little more. The indications from this year's experiments are, that if properly made, a useful material is obtained.

The ease with which these mixtures may be prepared will greatly recommend them to the small fruit grower who has not sufficient trees to warrant the installing of a steam boiling plant. It cannot, however, be too strongly emphasized that the greatest care must be exercised in the preparation of these washes. Only freshly burned lime of a quick slaking variety should be used and it must be handled in such a way as to recover the maximum of heat from the slaking. In order to accomplish this hot water should be used to slake the lime. In preparing the lime-sulphur caustic soda wash the caustic soda must be added in the powdered form, as in this condition it dissolves more quickly and causes more violent boiling than when in the big lumps.

Regarding the cost of these washes, as compared with that of the boiled mixture, it is impossible to give exact figures, for the cost of the boiling will depend on the efficiency of the steam plant used. As about the same amount of lime and sulphur are used in all cases, it practically leaves the cost of the boiling to be compared with the cost of the sal soda or caustic soda used, and the required quantity of these to make a barrel of the mixture can be obtained for 25 cents.

There is no doubt any of these mixtures will destroy the scale, but every part of the tree must be covered with the wash. Any part left uncovered acts as a seed bed for the reinfestment of the whole tree. As it is practically impossible to cover every crutch and crevice on the tree, the use of the lime-sulphur washes may not exterminate the scale, but there is no doubt that when they are properly applied the pest can be controlled.

FRUIT MATTERS IN MICHIGAN DISCUSSED

J. L. HILBORN, LEAMINGTON, ONT.

I HAD the pleasure and profit of attending, as representative of the Ontario Fruit Growers' Association, the annual meeting of the Michigan State Horticultural Society. The meetings were held December 6, 7, 8 at Benton Harbor, a beautiful town of some 10,000 inhabitants, situated on the eastern shore of Lake Michigan in the midst of the Michigan fruit belt.

Three years ago I visited this famous fruit section and spent a day or two inspecting the numerous peach orchards and vineyards for which the locality is noted. Among those visited was the much lauded and finely kept 200-acre orchard of Mr. Roland Morrall, who believes in and practices the most thorough cultivation and pruning. I liked his system of pruning the best of any I have seen. He has few main branches and these are regularly shortened quite heavily, making very stalky, strong trees, which have produced many very profitable crops.

There are many other very fine orchards in that vicinity and the best kept vineyards I have ever seen. The latter are all trained on horizontal trellises and most of them are carefully looked after. As the fields are quite level in the vicinity just south of Benton Harbor, where most of the grapes are grown, they present a very attractive appearance. We also visited a number of fine large peach orchards in the vicinity of Fenwell and Douglas, nearly all of which are headed much lower than they are usually grown in Canada and annually cut back quite heavily.

The 1904 annual meeting was a decided success. There was a nice display of plate fruit of good quality. The superintendent of the South Haven Experimental Station, Mr. T. A. Farrand, had a fine display of fruits grown there, including a dozen or so plates of nuts. He gave us a valuable address on varieties of apples, peaches, plums, cherries, nuts, etc., which they had tested.

Prof. W. J. Green, horticulturist of the Ohio station at Wooster, gave an interesting address on mulching orchards. He is strongly in favor of the sod mulch for orchards of all varieties of fruits. He prefers to have a sod field to start with and to dig good sized holes in the fall, planting the trees in the spring and mulching heavily a space four feet in diameter. The grass is mowed once or twice during the season and part of it is placed around the trees while they are young. It is left where cut after the trees get large. The speaker was well acquainted with the famous Hitching orchards, also several others handled in much the same way, which he claimed are entirely successful. They have been experimenting with that method for several years at the Ohio station, and the speaker claimed the results were very satisfactory. They tried it on a block of peach trees, cultivating half of it. The other half was seeded to grasses and the trees mulched. The latter grew as well as the culutivated portion and came through last winter in good condition, while the trees that were cultivated were all more or less injured.

A lively discussion followed the address and many theories were offered in objection, but the speaker claimed that the success of the orchards that had received this treatment was the best argument. The only real objections, he said, are danger from mice and fire. The former is overcome by removing the mulch directly against the trees and earthing them up. By exercising proper care there is not much danger of fire.

The meetings throughout were well attended and much interest was shown in each session. The writer received every attention and kindness from the officers and members of the society and was assured that they would send a representative to the annual meeting of the Ontario Fruit Growers' Association next year.

ONTARIO GROWERS ADOPT RESOLUTIONS

At the annual convention of the Ontario Fruit Growers' Association in November the following resolutions were adopted:

That the thanks of the association be tendered the sister society of Quebec for sending a representative, in the person of Mr. Chapais, to assist in our deliberations.

That the thanks of this convention be tendered to Mr. G. H. Powell, of the United States Department of Agriculture, for his attendance at our meetings and his valuable address on cold storage.

That the members of the Ontario Fruit Growers' Association have heard with sorrow of the affliction which has visited one of our oldest and most respected members, Mr. T. H. Race, in the death of his wife, and wish to express their sincere sympathy with him in the great loss sustained.

That this convention, representing the fruit growing interests of Ontario, desires to express its appreciation of the services rendered by the Dominion Department of Agriculture in inaugurating a system of crop reporting in regard to fruit, and hopes the service will be continued and be extended.

That this convention urges upon the Minister of Agriculture for Canada the advisability of securing such legislation as will give the inspectors under the Fruit Marks Act, or other suitable officers, absolute control over the loading of apples on shipboard for export from Canadian ports.

That this convention desires to respectfully but most strongly urge the Parliament of Canada to so amend the Railway Act as to place express rates under the control of the Railway Commission as are freight rates.

That whereas there is reason to believe that in many cases the returns made to fruit growers by commission dealers do not represent the full amount of the prices realized by such dealers, therefore be it resolved that the Minister of Agriculture for Canada be urged to take such steps as may be necessary to place commission dealers under Dominion regulations with a view of wholly preventing or largely reducing such fraudulent practices.

WHAT THE PEOPLE THOUGHT OF THE FRUIT, FLOWER AND HONEY SHOW

While the Fruit, Flower and Honey Show was in progress a representative of The Horticulturist asked a number of the leading people present what they thought of the show. The following expressions of opinion were secured:

"I believe this is the beginning of a big annual affair."—(The President, R. J. Score, Toronto.

"The show is a decided success and ought to be continued. The general effect has been of a valuable educational nature. The citizens of Toronto ought to give it their fullest patronage."—(Edward Tyrrell, President Toronto Horticultural Society.

"A feature of the exhibition which I consider of great value is the opportunity it affords for instruction in the best methods of grading and packing fruit, as shown by the expert packers from the Fruit Division. In addition to this the display of commercial packages and the fruit from the different provinces will serve to attract the buyers of fruit from our large cities, the adjoining Republic and the Old Country, which, if the show is continued, will develop a trade that is capable of almost unlimited expansion."—(W. H. Bunting, St. Catharines, Honorary President of the Ontario Fruit Growers' Association.

"The exhibit of flowers is the best ever made in Toronto. It is unfortunate the show could not have been held in a more suitable location and in a place of crystal construction, better lighted and adapted for such a purpose. As a convention city, and

ONTARIO FRUIT STATIONS
ONTARIO FRUIT STATIONS

A Portion of The Fruit Stations' Exhibits at the Recent Provincial Show.

Among the most interesting features at the Provincial Fruit, Flower and Honey Show, were the exhibits made by the Ontario Fruit Experiment Stations, portions of which are here shown. The grapes on the table in the foreground were a fine collection shown by Mr Murray Pettit, of Winona. The exhibits on the raised stand were the property of Mr. Linus Woolverton, of Grimsby, the superintendent of the stations, and Mr. A. W. Peart, of Burlington, both of whom showed excellent specimens of many varieties of fruit. (Photograph taken specially for The Canadian Horticulturist.)

in view of future requirements, such a building is one of Toronto's most pressing needs."—(Robert W. King, Toronto.

"The exhibition is the best of the kind we have ever held. The exhibit of commercial boxes is a most interesting and promising feature of the show. This feature can be greatly developed, as can the commercial side of the exhibition. I would like to see it arranged so that exhibitors could take orders for fruit."—(Linus Woolverton, Grimsby, Superintendent of the Fruit Experiment Stations.

"This is the best show ever held in Toronto. More florists from other cities have visited the exhibition than ever before and all have been delighted."—(Thos. Manton, Eglinton.

"The people who attended this exhibition appeared to be a better class than attended our previous shows."—(W. G. Rook, Toronto.

"The citizens of Toronto ought to be ashamed of themselves for not patronizing this show in larger numbers. Without exception the exhibits of fruit, flowers and honey are the best ever seen in Toronto."—(H. R. Frankland, Toronto.

"I am delighted with the exhibition. Every department is strong and I think the organizations interested should feel greatly encouraged."—(R. B. Whyte, Ottawa.

"It is a grand affair. For a start off we could not look for anything better. The bee men are satisfied."—(D. Anguish, Scottsville.

"A perfect success. Some Old Country people tell me they never saw anything like it. A show of this kind is just what is needed. It affords an opportunity for the growers to meet and bring out their ideas. The management has been quite satisfactory under the circumstances and I trust the show will continue."—(Alex. Biggs, Burlington, Ont.

"A grand success. The members of the Bee Keepers' Association have passed a resolution expressing the hope that the show will be continued another year. If it is we will be with you again."—(H. G. Sibbald, Claude, Ont., President of the Ontario Bee Keepers' Association.

"The exhibits are excellent. The show has been a decided success and should be continued."—(W. T. Macoun, Central Experimental Farm, Ottawa.

COOPERATION AMONG ONTARIO FRUIT GROWERS

THE following article is the continuation of the account, which started in the December issue of The Horticulturist, of the discussion on cooperation, held at the recent convention of the Ontario Fruit Growers' Association. Mr. D. Johnson, of Forest, had been asked what price growers in his section, who did not cooperate last fall, received for their apples.

Mr. Johnson: "Very few growers were able to sell their fruit at any price, but those who did sell realized 50 to 60 cents per barrel for their firsts and nothing for their seconds. Some only obtained 10 to 12 cents per bag for No. 1 apples."

Question: "What did you do with your waste fruit?"

Mr. Johnson: "It was sold to two evaporator firms and we obtained 15 cents a bag for the peelers and 5 cents for chops. One of these evaporators is located at my place and handles 100 bushels per day; the second one is at Forest and is managed by a company which handles 500 or 600 bushels a day."

Question: "How much fruit did you handle?"

Mr. Johnson: "About 38 or 40 carloads. We also cooperated in securing our barrels. We bought our own material and employed a cooper. The barrels were of excellent quality and cost us only 28 cents each. At the last of the season, when our supply was exhausted, we tried to buy some barrels from coopers, and although we enquired everywhere we were unable to obtain any for less than 45 cents per barrel and they were not nearly as good as those we had made ourselves.

"Some one, this afternoon asked how a man could be expected to sink his own identity when he joins an association of this kind. The members of our association sunk their identity and have never regretted it. Occasionally some of the growers place their initials on their barrels, but the initials never appear in the invoices or bills. We are well pleased with this year's work and look forward with confidence to next season. One of the benefits that has resulted from handling our fruit in this way has been that the steamship and railway lines have been anxious for our business and have made material concessions to obtain it. Mr. Sherrington's suggestion that the growers should have a central organization is a good one. I have thought that if a central station could be established, say at Toronto, so that the various local associations could all ship their fruit to it or arrange to have their fruit handled in bulk it would be a much better method than anything we have at present."

Question: "Did you pack in cases?"

Mr. Johnson: "No. We were young in the business and did not care to undertake too much the first year. I am sorry now that we did not ship some of our fruit in that way."

Question: "What was done with your culls?"

Answer: "We sent them to the evaporator and the returns were utilized to defray general expenses."

Question: "That seems hard on the man who had a lot of culls?"

Answer: "Yes, but we told such men that it cost more to handle their fruit."

COOPERATION IN ONTARIO COUNTY.

A call was here made for Mr. Elmer Lick, of Oshawa.

"There are," said Mr. Lick, "a great many difficulties before fruit growers when they try to cooperate. In our district the buyers combined and coaxed the growers to forsake the cooperative association, and we found it difficult to carry out our plans. There were many buyers this year and they offered the farmers good prices."

Question: "How much was offered?"

Mr. Lick: "As high as $1 per barrel in some cases, but in the end the growers were unable to obtain this amount when the buyers settled."

"A few of us," continued Mr. Lick, "combined and shipped our fruit together, and I believe we are going to obtain better prices than the growers who sold privately. Now that we are forming so many cooperative associations throughout the country it has struck me that we need a central head to combine and watch the interests of all. Such a body might be called The Ontario Fruit Growers' Union, and the various subdivisions might be called the Forest Branch, the Whitby Branch, etc."

Mr. Sherrington: "It has been intimated that the reason the fruit growers in the Forest and Walkerton districts have been able to cooperate was because the buyers did not oppose the movement. That was not the case in our district. The buyers tried the same game with us that they did with Mr. Lick. Some of our growers were coaxed off, but they were afterwards sorry and were glad to come back. It was the same at Forest."

COOPERATION IN THE NIAGARA DISTRICT.

Mr. Robert Thompson, of St. Catharines: "The fruit growers in the St. Catharines district became incorporated several years ago and lately we have been devoting our efforts largely to improving the freight service. Last year, in spite of the heavy crop of plums, we obtained fairly satisfactory prices, and we now find that our members expect higher prices for their crops than they used to before we cooperated. Last spring we held a number of meetings along the line of the railways to urge greater cooperation, but as this year's crop has been rather small and the prices good we did not push the matter as we would otherwise have done. We do quite a little in the line of cooperative spraying. In the township of Louth the fruit growers bought an outfit and did good work. In our township some of the threshers took charge of the work and the growers agreed to pay their share of the expense. The results of this spraying have encouraged the growers to grow more fruit. The response of the trees to this treatment has been very encouraging as the spraying not only prevents but acts as a remedy for the scale and has an equally beneficial effect on the curl leaf and other kindred diseases. The results have greatly encouraged the growers.

"We have also cooperated in the purchasing of paris green, blue stone, boxes, etc., and, thereby, have made a nice saving. When purchased in large quantities we find that the quality of the spraying material secured is much better than where growers buy individually in small quantities.

"In regard to the trial shipment of fruit to Winnipeg I may say that the fruit growers in the vicinity of St. Catharines are sufficiently well satisfied with the results that they are willing to continue such shipments provided proper oversight is given and the interests of growers are safe guarded at the other end."

Question: "What is the largest district that can safely be included in a cooperative association?"

Mr. Sherrington: "About ten miles. I am not in favor of districts that are too large. Where the district is too large I would like to see a number of smaller associations put in charge, which in turn would ship to a large central station. I am strongly in favor of F. O. B. sales. When growers do not know what they are going to obtain for their fruit it keeps them on the rack. Buyers with whom I have talked assure me that they are willing to do anything they can to assist the formation of cooperative associations but they desire to be assured of the proper grading of the fruit."

THE BURLINGTON FRUIT GROWERS ASSOCIATION.

The methods that have been adopted by a number of the fruit growers in the vicinity of Burlington were described by Mr. A. W. Peart. "A small number of the fruit growers in my district," said Mr. Peart, "have cooperated in a general way. By doing so we find we can buy our supplies much cheaper and also obtain better shipping rates. Each individual shipper places his name on his own shipments in addition to which they are branded with the common brand of our association, which is simply a number. The buyers in Great Britain make separate reports in regard to the prices realized by each man's shipments. In this way we are able to keep track of the amount due each grower. All our fruit is shipped in boxes and we find we make 50 cents to one dollar per barrel more by shipping in this way. Our boxes average four to the barrel.

"We find that it is cheaper to handle our fruit in this way on account of a saving in the cost of labor. In sorting and grading apples, women are able to do as much and in some cases more work than men and at one half the wages. The women will not handle large packages and were we to use large boxes we would have to employ men, which would cost more."

Question: "What is the size of your boxes?"

Mr. Peart: "Nine by 12 by 18 inches inside measurement. We have found this size works well as our growers obtain due credit for their shipments."

Question: "Is there anything binding in your association?"

Mr. Peart: "No, only our honesty. If we had a central packing house we would endeavor to arrange so that each man's name would continue to appear on his consignments of fruit."

Question: "Do you think it would be possible to grade your fruit to the satisfaction of your members?"

Mr. Peart: "No, that would be reaching the ideal."

Question: "If you found a man was shipping poor fruit is there any way in which you could prevent his using your brand?"

Mr. Peart: "We are very careful when taking in members. We will not allow a man to join our association unless we know he ships good fruit. The price each grower receives is the best safeguard we have that he will ship good fruit. We find it is a good one.

"When the market in the Old Country is not satisfactory we sometimes arrange to have our fruit stored. On some occasions fruit has been stored for some months. Our system works out well for late pears suitable for export. We have shipped without cold storage and have found that the pears arrived in good condition."

Question: "Do you send a man to Great Britain to watch your interests?"

Mr. Peart: "No, we simply consign our fruit to commission men."

Question: "Could not growers place a man in Great Britain to watch their interests?"

Mr. Peart: "Such an arrangement would be very difficult. The British firms, handling Canadian fruit, have been in the business for a great many years and are firmly established. Most of them have numerous connections in other cities and know how much credit they can give their agents and how long it is safe to let their credit run. Were growers to try to compete against these firms we would find it almost impossible to meet their opposition. Such a man, however, might be of great value in watching the prices at which fruit was sold, etc."

Mr. H. W. Dawson, commission merchant, Toronto: "I have made a study of this cooperative question and have reached the conclusion that apples handled through central packing houses with a common brand will do more to improve the trade than anything else."

DISEASES OF THE GRAPE IN ONTARIO IN 1904 *

W. T. MACOUN, HORTICULTURIST, CENTRAL EXPERIMENTAL FARM, OTTAWA.

KNOWING that rot was causing serious damage in a number of vineyards in the Niagara peninsula, I took an opportunity during September, to visit some of them in the hope of learning facts of value in regard to the diseases of the grape. Accompanied by Mr. W. H. Bunting, of St. Catharines, I visited his vineyard and others in the neighborhood of St. Catharines and found that Mr. Bunting had sprayed seven times and his fruit was only slightly injured.

When the grapes were the size of peas Mr. Bunting had bagged 1,000 bunches in order to find out if infection took place before that time. Most of the bunches thus bagged were perfect, but some had the black rot in various stages of development, showing that infection had taken place before the grapes were as large as peas. The Niagara grape was the variety most affected. Several vineyards of Concord near Mr. Bunting's were examined, but black rot had not worked to any extent in them. Brown rot was, however, found in one vineyard, but had not done much injury to the fruit. Another vineyard, containing about 15 acres, was visited, consisting principally of Concord, Brighton, Niagara, and Moore's Early. Of Niagara and Brighton there was scarcely a sound grape anywhere, and none of the bunches of Concord, even with manipulation, could be made fit for market. Moore's Early was not affected. This vineyard had not been sprayed.

The infection by the black rot as it appeared in the vicinity of St. Catharines was first noticed on the fruit as a round, brownish spot about the size of the head of a pin. This brownish appearance gradually spread over the surface of the berry, and by the time one-third of the surface was covered the original brown spot had become paler, showing distinctly the mark of infection. After the whole grape became brown, the tissue gradually shrunk and dried, and when thus shrunken the fruit appeared black and prominently and irregularly ridged, the surface being covered by small black postules.

THE BROWN ROT.

The vineyards of Mr. Murray Pettit, of Winona, Ont., and others in that vicinity were also visited. No black rot was noticed at Winona, but brown rot was quite abundant, and while it had not caused such damage as the black rot, it had done considerable injury. The leaves of the vines affected with brown rot had a downy appearance underneath. The affected fruit first showed a brownish spot or patch on one side and a shrinking of the tissue. The brownish appearance spread all over the grape and the whole grape eventually shrunk into a hard shrivelled mass. When badly affected the vine loses a large amount of foliage. Powdery mildew was also found in these vineyards.

The Niagara grapes, both in Mr. Pettit's and adjoining vineyards, were affected this year with either a new disease or more probably, as Prof. Selby suggests, a condition caused by either powdery mildew or brown rot affecting the stem to which the grape is attached. This disease causes a hardening of the grape and gives it a pale, unhealthy color.

Another disease of the grape which was doing a great deal of injury at Winona was what we took to be the grape-leaf blight, a disease which has not received the attention that it deserves. This blight causes the leaves to wither and drop, thus preventing a free circulation of sap and the proper development and maturing of the fruit.

PERSISTENT SPRAYING REQUIRED.

The diseases of the grape can be controlled by thorough spraying, but the work must be done persistently and carefully. The following are descriptions of some of

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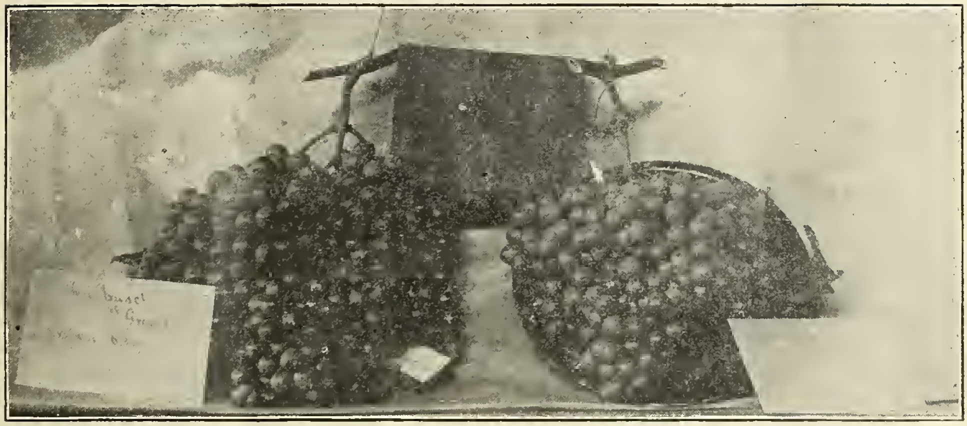
* Extract from an address delivered at the annual convention of the Ontario Fruit Growers' Association held in Toronto, November 16-18, in connection with The Provincial Fruit, Flower and Honey Show.



Two Monster Bunches of Grapes.

These two bunches of hot-house grapes were shown at the recent Provincial Fruit, Flower and Honey Show, by Mr. John Chambers, City Park Commissioner, Toronto, and attracted a great deal of attention. One weighed six pounds, two ounces, and the second four pounds one ounce. The grapes were grown in an ordinary greenhouse. (Photograph taken specially for The Canadian Horticulturist.)

the most injurious diseases of the grape in Canada, with the best remedies known:

Anthracnose, Bird's Eye Rot, Scab *(Sphaceloma Ampelinum)*. This is the only grape disease which has given any trouble at the Central Experimental Farm. It is difficult to control by spraying, but fortunately, only a few varieties have been affected, Lindley being the worst. This fungus attacks leaves, stems, and fruit, but it is on the fruit where it is most noticed. The disease is apparent in depressed patches extending along the stems, which checks the growth. There are also reddish brown patches on the leaves.

The stems of the clusters of grapes are frequently affected, and when the disease occurs there the fruit remains green and eventually withers, making an imperfect bunch. The disease on the fruit occurs in roundish brown spots with a purplish margin, giving somewhat the appearance of a bird's eye. Frequently spots unite and form a large irregular area. This is a very difficult disease to control, and though spraying with Bordeaux has not checked it to any extent, spraying before the buds open, before blossoming, after fruit has set and ten days later with Bordeaux mixture, is recommended.

IS INVADING CANADA.

Black Rot *(Laestadia Bidwellii)*. Up to recent years this disease was thought to have reached its northern limit south of Lakes Erie and Ontario, but during the last few years in Essex county, and more recently in the Niagara peninsula, it has caused much damage. The appearance of this disease has already been described, but something further may be said regarding it. The spores live over winter on the vine and in the affected grapes, and germinate when growth starts in the spring. The disease attacks the leaves and shoots, the leaves showing the disease in roundish reddish brown patches and on the stems, small, long shaped, dark, brown, slightly depressed spots, on the surface of which appear the characteristic postules of the black rot.

When conditions are favorable the disease only requires 8 to 12 days from the time the spore germinates until the mycelium has run its course through the fruit and has produced new spores. Before the grape shrinks much in size the mycelium concentrates, as it were, in small masses underneath the skin, and in these are produced the spores. These masses soon break through the skin, and the black pustules with the spores appear. The spores are scattered and they reinfect other fruit and vines. Although it is possible for a new generation of spores to be borne within two weeks, it requires favorable weather conditions for the disease to develop.

While early sprayings, in some cases, have not been found to give the results expected, the life history of the disease shows that it is wise to endeavor to destroy as many spores as possible at or before the first infection. The first spraying should be made just after the fruit has set, the third and fourth at intervals of about a week—all with ordinary Bordeaux mixture. There should then be three sprayings with ammoniacal copper carbonate of soda Bordeaux. Although the disease will probably not be eradicated from a vineyard in one season, the more thoroughly the spraying is done the less trouble there should be. It is now 16 years since it was conclusively shown that Bordeaux mixture would control this.

GIANT SEEDLESS GOOSEBERRIES

SAMPSON MORGAN, RICHBOROUGH VILLAS, BROADSTAIRS, ENGLAND.

THE list of seedless fruits is being rapidly extended. The seedless orange was followed by the seedless plum, which was succeeded by the seedless apple, and now we have the seedless gooseberry. There can be no doubt as to the importance of this latest new comer, at least as far as the fruit trade is concerned. The seedless gooseberry will become popular, directly it is put on sale. Judging from the enormously increased consumption of berry fruits during recent years, it will readily take a firm hold upon the public taste.

When this fruit is well grown and ripened, few others surpass it. That is evident when we bear in mind the fact that during the past year gooseberries put up in flat punnets have sold as high as one shilling a pound retail and in quantity. Freed from its numerous seeds, the gooseberry of the future will command equal prices with mid-season grapes. The new berry is not only free from seeds, but it has a remarkably thin skin, and the amount of acid in the pulp has been reduced materially. The fruit has been almost perfected.

The hard skin of the old-fashioned gooseberry has always been a defect, and one that has prevented most of the supplies marketed from being sold at more satisfactory values. A sweet gooseberry of full size, devoid of seeds, and with a thin soft skin, would be an undoubted acquisition to retailers and consumers. It should, in fact, soon equal the summer grape in popularity. The introducer claims that the seeds can in due time be eliminated from all of the fruits in commerce, and that it is just as easy to produce a seedless grape and pear as a seedless apple or gooseberry. It will surprise many of the public to be told that gooseberries are often grown as large as many kinds of plums. The new seedless berry is of mammoth proportions.

The Cuthbert raspberry, notwithstanding its liability to kill back at the tips during winter, in a good season leads all others in quantity and quality.—(G. C. Caston, Craighurst, Ont.

Of the cooking cherries, nothing can compare with Dukes, a class of semi-sour red cherries that cannot be excelled for sauce and pies.—(Linus Woolverton, Grimsby, Ont.

Growing Gooseberries

R. B. WHYTE, OTTAWA, ONT.

THE chief difficulties in growing gooseberries are the hot weather and the liability to mildew. The gooseberry succeeds in Britain, and we should compare our conditions with those found there to see in what way we may overcome our difficulties. One of the first conditions in Britain is the rich soil. We here are apt to forget that farm soil in England has been cultivated and fertilized for 200, 300 or 400 years. Gooseberries must be well fed. I am inclined to believe in the theory that no insect or disease ever attacked a healthy, well-fed tree.

Another consideration is the moist climate. They never know in Britain what it is to have long spells of dry weather like we have, and the climate is more moist. Other conditions are a more equal temperature and the saltiness of the atmosphere.

With regard to temperature, it is difficult for us to get the moderate temperature that growers have in the Old Country. Some obtain it very satisfactorily by planting the bushes between trees, but certainly we can get fine gooseberries by so doing, and they should be in partial shade. The trouble which comes from excessive temperature is that the berries which are exposed to the sun are actually cooked. I have seen berries with a side scalded yellow by the sun, and then drop off.

It is rather a surprise to those who import plants from the Old Country to see the different styles they grow them in to what we do. The stems of some plants I had were about half an inch in diameter, about 10 inches long, and had roots about four inches across at the bottom. The advantage in that style of growth is, that you ensure the free circulation of air under your plant, and that, I think, is one of the great considerations in preventing mildew. I have grown some of my plants in the American style, and, as a rule, those I start myself I grow in that style; but those from the Old Country are on the long straight stem style.

A Yellow Blackcap

PROF. H. L. HUTT, O. A. C., GUELPH.

Is there a "Yellow Blackcap Raspberry" on the market? I have a Yellow Blackcap raspberry that grew up among my Blackcap raspberries. It bears a large crop of fruit, similar to Gregg in size, but of a beautiful yellow color and of an extra fine quality. The canes are very strong growers and of a peculiar yellowish color. It stood the severe cold of last winter, uninjured, and was unprotected.—(Chester Wiederick, Nanticoke, Ont.

I do not know of any Yellow Blackcap which has been propagated for sale, although we had one here a few years ago which originated with Mr. A. E. Sherrington, of Walkerton. We grew it under the name of Mulatto, but after growing it a few years, discarded it on account of its poor quality. If yours is as promising as you describe it to be, we would like to get a few plants to give it a thorough trial, and would, of course, keep the plants under restriction if you so desire.

I am doubtful, however, if a Yellow Blackcap will ever be popular in the market. Yellow strawberries, yellow tomatoes, yellow raspberries, and most freaks of that kind are not in general favor in the market, although, no doubt, some are well worthy of propagation for home use.

To Grow Grapes of fine sample and good quality the first and most important point is short pruning to prevent overcrowding. The next is to apply sulphur about the last week in June or first in July to prevent mildew, and the next is to allow them to fully ripen before picking. If grape growers would comply with these conditions the market for grapes would require one-half more than it does and at higher prices.—(M. Pettit, Winona, Ont.

THE SPRING TRADE OF THE FLORIST *

WM. GAMMAGE, LONDON, ONT.

ONCE the Christmas holidays are over preparations for the next great event in the florist's year, that is Easter, must be attended to. The varying dates on which Easter falls must always be borne in mind so that you may govern your crop accordingly. For the Easter holiday a number of different varieties of plants, than those forced for the Christmas holidays, will be used. First and foremost are Easter lilies, either the Longiflorum or Harrisii.

For pot plants I consider the seven to nine-inch bulbs the best size. There is a difference of opinion how these should be grown; some contending that they should first be potted in a four or four and a half inch pot and then shifted up into six or seven inch pots, as the plants come along. Others again that they should be potted in the pot in which they are to bloom. The only difference that I can see is a slight economy of space in their early stages. From my several years of experience in growing and handling these I see but little difference in the result when handled by a careful grower.

There is one essential point to always bear in mind; from the time the lily starts growing it should never receive a check, for if it does any germs of disease that are lying dormant are sure to develop. Nor can you guage its date of flowering with the same degree of success as if it had not received a check. There are a number of brands of Lilium Longiflorum on the market, but I do not think that there is any material difference between any of them.

GOOD BULBS REQUIRED.

The main object is to have good, sound, well ripened bulbs. Under the same conditions Longiflorum will come in if started from four to five weeks later than Harrisii. While the lily is the Easter flower *par excellance,* it is also the most expensive to grow and hardest for the store man to handle.

Other plants that will need immediate attention are hydrangeas, crimson rambler and hybrid perpetual roses; these should be brought in and started into growth in a moderate temperature, gradually increasing it, governed by the time at your disposal. Azaleas that are to be held for Easter should be kept in a cool house with an even temperature, free from drip or excessive moisture. Other varieties of plants, such as metrosideros, lilacs, rhododendrons, deutzias, etc., will not need to be brought in before the last week in February or the first in March.

Amongst the soft wooded plants the improved varieties of pelargoniums are going to take a prominent place as an Easter plant. These, if propagated during September and October and kept growing, will make fine bushy plants in five or six-inch pots, with six to ten large trusses of flower, by April. They are easily handled, very floriferous, and find a ready sale, giving customers as good satisfaction as an azalea or a crimson rambler, and will yield a better profit to the grower. Spirea, or Astibula, are also a prominent Easter plant and are sold in large quantities. Dutch bulbs should not be lost sight of. Pans of hyacinths, tulips and narcissus, in their various varieties, are sold in large quantities and are easily brought in at the right time; three weeks in a moderate temperature is all that is required to bring them to perfection.

Lilies of the valley and forget-me-nots in pots and pans are also desirable. It will be necessary to prepare a few foliage plants, such as Boston and Pierson ferns, palms and rubbers, but let your main effort be to prepare a stock of good flowering plants for the Easter trade. Of all the holidays in the year, Easter is the one on which most flowering plants are used. Its associations are of a joyous nature and all people, be they rich or poor, high or low, are imbued with the happiness attending the occasion and want something bright and cheerful, in keeping with their feelings.

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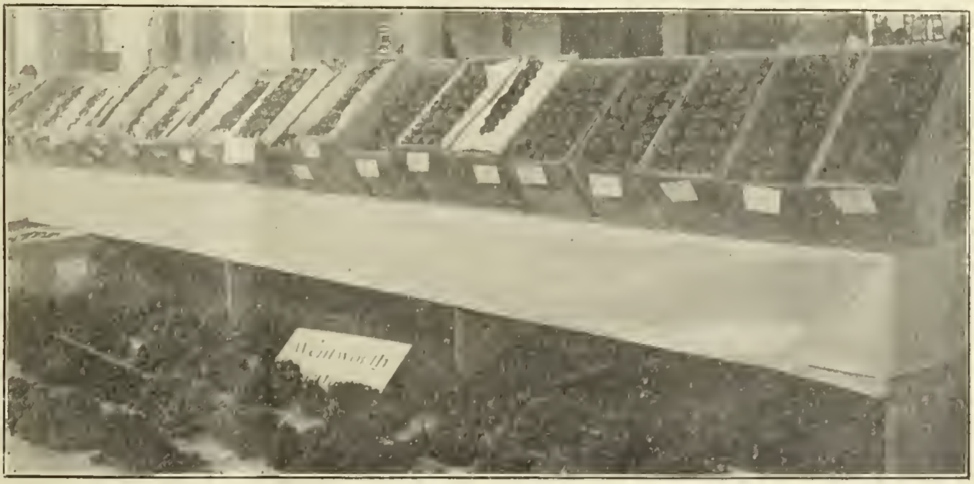
* Extract from a paper read at the annual convention of the Canadian Horticultural Association, held in Ottawa last August.

Care in handling and delivering plants is necessary at all times. Easter lilies are very hard to handle without bruising. For shipping the best method is to allow the plants to become somewhat dry so that the flowers will be just a trifle wilty and each individual flower and bud wrapped in cotton batting. The plants should be firmly staked and each row should be cleated into the cases and a top cleat nailed across the case just below the buds and each row of plants tied to this cleat. If this work is thoroughly done you will have no drawback or rebates to make, for bruised flowers, while in transit.

There are a number of plants that I have not mentioned which might be brought in for the holidays, such as freesias, ericas, ardesias, capsicums, bouganvillia, etc. It is well, from year to year, to change the varieties that you are growing, dropping some that you find the demand decreasing on and adding others that are likely to create a demand. That the demand is increasing, and will continue to do so, is without a question of doubt.

The time was when all our efforts were concentrated in endeavoring to have a sufficient supply of cut flowers to fill the demand, but gradually plants are superseding this demand, and while at holiday times there will always be a demand, sufficient to take all the cut flowers that can be produced, the demand for both plants and cut flowers is not likely to be overdone, for some time to come, for the growth of our country is such that her ultimate possibilities are greater and grander than all the European and American States combined.



An Exhibit of Commercial Packages at the Fruit, Flower and Honey Show.

The exhibit of Commercial Packages including boxes and barrels, was one in which great interest was taken by fruit growers. The boxes and barrels had been packed with the greatest care and presented a fine appearance. A portion of the grape exhibit is also shown. (Photograph taken specially for The Canadian Horticulturist.)

A PLEA FOR THE AMATEUR FLOWER GROWER

RODERICK CAMERON, NIAGARA FALLS SOUTH, ONT.

IT is presumed that the main object of all agricultural, horticultural, and even fruit, flower and honey shows, is the education of the general public to a higher standard of proficiency in the arts, being promoted. May I ask if, in the holding of exhibitions like the recent Provincial Fruit, Flower and Honey Show, we are on the right track ?

Here they are, at our very doors, the old and young, male and female, with a grievance, which the professional florists can rectify if they choose; and depend upon it, if we are to attain excellency in horticulture as a nation, if we are to succeed in teaching the rising generation the art of beautifying our land as has, and is being done in Great Britain, this grievance of the amateurs must be attended to immediately and their wishes be complied with.

Were the exhibitors at the recent show amateurs? No they were all professionals, particularly in the floral sections. Only experts could grow such large flowers as those that were shown. We should show more equality and liberality towards the amateurs. Were they treated as liberally as the professionals at all fairs I am satisfied the results would be surprising, both in quantity and quality. Would this not be a benefit to the commercial florist? There is a prevailing notion among some commercial men that to keep the public in ignorance is a harvest to the florist. What a mistake! Does it not instill into Mrs. Smith a greater love for floriculture if she succeeds in growing a plant successfully? And does not ignorance discourage Mrs. Jones, who says "I have given up buying plants, they all die on me." Why? It is not lack of desire, but a lack of knowledge. As men of business we should also be men of instruction.

What is the method usually adopted at the Canadian National Exhibition in Toronto and all country exhibitions? No encouragement is offered the amateurs, all prizes are entered in the prize lists in such a way that they are open to the professionals to compete for. I question if any amateurs are on the committee that revise the prize lists, where they might be able to right things for themselves. This is not the worst feature; the prizes that are offered are principally for tropical plants, and professional florists' flowers, that cannot be grown successfully without the aid of glass structures, an expense that ordinary amateurs cannot afford.

Have any of us taken the trouble to examine the plants and flowers shown at our principal exhibitions? If we have can we tell how many had their names attached to them? I have seen ladies and gentlemen looking in vain to find the names on plants at the exhibitions held in Toronto each fall. What is the value of any flower without a name, that its history may be obtained. What educational advantage does such impart to the amateurs we are supposed to be helping? It should be made compulsory that all plants and cut flowers be correctly named, and that in a legible manner. Exhibitors who cannot comply witn this request should be cut short ten points for every plant not named, or the unnamed plant should not be counted at all.

The prizes offered for fruit are of a generous nature and are worth trying for, apart from the honor, but the prizes offered for flowers and plants, that amateurs can grow, are of a very penurious nature. This should not be the case. It is of more value to the province for an amateur to grow a pine tree than the best tropical plant. Why then not encourage the growth of hardy plants more than has been done in the past? Why not encourage the growth of hardy plants by farmers' sons and daughters by offering prizes for the best essays upon such? Would it not have a tendency to make them more familiar with what grows in their own surroundings? It has been said that the best and cleverest men and women in all other pursuits have been reared in the rural homes of meager circumstances. If this is true is there not a chance for the amateur to rise in the art of gardening even to the strength of a Groff, Dale or Dunlop? Give them a fair chance since gardening is the only recreation in which a man of limited means may equal the owner of a thousand acres. Although the owner of only a single lot and ten cents worth of seeds, he can produce whatever he grows quite as well as my lord can his, and his pleasure in doing so may be greater to him than that of the nobleman to whom he may be laborer. Gardening offers so many subjects for an amateur's attention that he or she need not take up that which some one else excells in.

A CHEAP GREENHOUSE*

W. G. ROOK, TORONTO, ONT.

At a meeting of the directors of our society the opinion was expressed that many of our members would have greenhouses if they knew they could be obtained for a small expenditure. As I have succeeded in building a small greenhouse at but slight expense my experience might be of value to others.

Early in the spring of 1900 I decided I would build a small greenhouse in which to grow the plants I wished to grow in my own garden. The snow was cleaned from the spot selected and soon the ground thawed sufficiently to enable me to commence building. Two sash, seven by eight feet, were purchased for $3.75. The lumber for the sides, ends and benches and the glass for the end cost $7.70. When this material was placed in position I had a greenhouse eight by ten feet.

There not being sufficient time for me to put in a heating system I formed one of the benches into a bin and filled it with fresh manure. This gave enough heat to keep out the late frosts and enabled me to grow 2,000 annuals besides my chrysanthemums for the fall. My success encouraged me to purchase another frame for $1.75 and lumber for $5.35 with which to build a potting shed and a place for the heater. This also being a success, I added in the spring of 1902 another eight feet, which gave me a house 12 by 25 feet. The total cost of construction, including even the latch on the door, was $60. There was no expense for labor, as the building was erected and the heating system installed by myself with the assistance of a former member of this society.

The house is heated by a Globe heater with a Bigley coil inside. One one-and-a-half-inch flow runs from the coil to the greenhouse and then enters two one-inch pipes, which carry the water around the house and return it to the heater. A temperature of 50 degrees can be maintained at night with the weather at zero. During the winter between three and four tons of coal are required to heat the house. The heater and pipes used were bought second hand and cost, with all necessary connections, $15, which is included in the $60 mentioned.

In 1901 I grew about 2,000 annuals. In 1902 I again grew about 2,000 annuals and filled my hanging baskets and window boxes. During 1903 I grew 4,000 annuals and 500 chrysanthemums, and am now growing carnations, smilax and forcing bulbs, besides keeping my stock over the winter. With a greenhouse such as this, there is a possibility of securing an income from your labor by growing flowers for exhibitions, prizes, etc.

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* Extract from an address delivered before the Toronto Horticultural Society. Societies are invited to forward interesting papers read at their meetings.

THE WINTER CARE OF WINDOW PLANTS*

WM. HUNT, ONT. AGRI. COLLEGE, GUELPH.

SPRINKLING the foliage of most window plants with clear water on fine, warm, sunny days is desirable. Rex Begonias and even geraniums, however, do not like the leaves moistened too heavily. The true Rex Begonias would be better without any sprinkling or sponging of the leaves. Fuchsias, roses, heliotrope and most foliage plants, except coleus, like a sprinkling or sponging of their foliage every few days. This operation can be performed with a small rubber sprinkler, or the plants can be taken to a sink in a warm room and the foliage well sprinkled. As a rule all glossy, smooth leaved plants require frequent syringing or sponging with clear water. It removes dust, and counteracts the evil effects of the dry atmosphere prevailing in most dwelling houses.

Almost all window plants delight in a moist atmosphere, except a few cacti and similar plants. A few shallow pans of water placed under the hot water or steam radiators will help to give the plants a taste of their natural environments.

Prepared commercial plant foods are the best fertilizers for window plants. If, however, good potting compost is used, there will be little need of plant foods. Plants, whose pots have become too full of roots and which have exhausted the soil they are in, are usually the only plants that require fertilizers when properly prepared potting soil has been used.

TEMPERATURE.

More plants are injured and destroyed in these days of self-feeders, hot air furnaces, and steam and hot water boilers, by over-heated and dry atmospheric conditions, than are destroyed by a too low temperature. A temperature of 65 or 70 degrees Farenheit in the day time is ample for most window plants, with a night temperature of 50 to 55 degrees. Plants like a rest at night as well as people. One point in regard to temperature is of importance, and that is to avoid extremes of either heat or cold, as they are dangerous to plant life.

The insect pests that trouble house plants most are the green and black aphis or fly, red spider, scale, and mealy bug. A dry arid atmosphere is conducive to the increase of all these pests, hence the necessity of keeping the foliage of plants they infest as moist as possible. For the aphis, use a strong solution of tobacco water and sprinkle it on where the insects are. Raw leaf tobacco or tobacco stems from the cigar factory make the best tobacco solution, as the ordinary commercial plug tobacco is of little use for plants.

To make the tobacco solution fill a pail about three parts full of the leaves or stems and press them down rather firmly. Pour in enough boiling water to cover them about an inch in depth and nearly fill the pail. Cover the pail with an old bag to retain the steam. Let it stand until cold, in which condition it is fit for use. It will not require diluting, as tobacco water does not injure the foliage like many insecticides. A pint of boiling water poured on a bruised cigar will also make a good tobacco solution. Fumigating with tobacco smoke is very effective, but is scarcely practicable in a window.

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* Extract from an address delivered at the convention of delegates from horticultural societies, held in Toronto Nov 15-16.

Prevention is better than a cure with red spider. A moist atmosphere and sprinkling the foliage, especially on the lower side, is the best preventive against attacks of red spider. These little mites usually attack the lower side of the leaf. A dusting of finely powdered sulphur beneath the leaves, after syringing or sprinkling, is a good remedy and will not hurt the plants. The red spider is the greatest enemy the fuchsia has, and is often the only cause of failure in their growth. It is so small that it is often unseen until the plants are ruined; hence the necessity for preventing its attacks.

The small scale-like insects that attack the oleander, ivy, orange and other plants, as well as ferns, notably the sword fern, can be got rid of by washing the leaves with strong soap suds and rinsing afterwards with cold water. An old tooth brush dipped in soapy water will also remove scale easily. If scale is once moved from its position on the plant it will die.

Mealy bug should be brushed off the plants with a small brush or piece of stick and destroyed, as soon as they appear. This bug infests coleus very badly sometimes, and is very fond of nesting itself on the passion flower plant or in the thick waxy flowers of the wax plant. Good culture is the best preventive of disease in plants.

Most window plants are propagated from cuttings or divisions, chiefly from cuttings of the young wood. Sharp, fine sand is the best material in which to strike cuttings or slips. Almost all kinds of window plants such as geraniums, fuchsias, heliotrope, tradescantia, coleus, chrysanthemums and many others will strike root readily from the young cuttings or growth. Young plants of chrysanthemums are easily struck in the window in a temperature of 55 to 60 degrees in well drained pots or small boxes of sand.

If plants should be frozen, remove them at once into a temperature of 45 to 50 degrees, and cover them up carefully from light and air. If not frozen too badly they will recover. I have found this method more successful than sprinkling the plants with cold water. Unless the latter is done the plants should be kept in the dark for 24 hours before being again introduced into the light. Keep frozen plants out of the sun until they have fully recovered, and do not give them much water until growth has started.

Almost all the spring flowering bulbs flower well when grown in the window. Hyacinths—especially the white Roman hyacinth—and the different varieties of narcissus give the best results for window culture.

Hardy Climbers

PROF. H. L. HUTT, O. A. C., GUELPH.

Would Ampelopsis Veitchii, Clematis Henryii, Jackmanii and Madame Ed. Andre be hardy enough for the Bobcaygeon district?—(E. D. S.

Ampelopsis Veitchii is only about half hardy at Guelph. It usually requires some protection for the first two or three years until it gets started and somewhat acclimatized. Often it is frozen down to the ground during the winter and yet makes a good growth the next season. The best protection is a light screen of cedar boughs or old sacking tacked over the vine upon the wall.

Clematis Jackmanii is quite hardy here, and usually makes a fine display. The C. Henryii and C. Madam Ed. Andre are also fairly hardy, but are not nearly as much grown as C. Jackmanii. I cannot speak with certainty as to the hardiness of these climbers in the Bobcaygeon district, but at all events they are well worth trying, and I am inclined to think that with reasonable protection at the start they would give satisfactory results.

A Beautiful Collection of Hardy Azaleas.

Although this is the season of snow storms and cold weather, the illustration should carry us back to the "good old summer time." What were probably the best and most successfully grown hardy Azaleas in Ontario last summer are shown. They were grown by Mr. Roderick Cameron of Niagara Falls South, and contain about 100 varieties, double and single flowers, named. Mr. Cameron is shown in the illustration.

Make Fine Decorations

E. MEPSTED, OTTAWA, ONT.

EVERY one in a large or small house should have a plant or two. They are the nicest decoration you can put in your room. A large, handsomely furnished room is not complete without a plant or two. A palm or Boston fern in my eyes is a better decoration than any bric-a-brac.

The most suitable plants for house culture are foliage: Palms, Boston and Pierson ferns, araucaria, aspidistra, asparagus and fern dishes. Don't forget that these last soon get filled with roots and, therefore, need plenty of water, but should not stand in it.

In flowering plants, which should always have the sunniest spot, the best are primroses, begonias, cyclamen, primula obconica, azaleas, cineraria, heather and others. Give the azalea lots of water, keep it in the coolest place, and when it has done flowering don't put it down in the cellar to rot, as many have done to their sorrow. Keep it growing all the time.

Asparagus Plants Wanted

PROF. H. L. HUTT, O. A. C., GUELPH.

I am thinking of planting an acre of Palmetto asparagus next spring. Can you furnish the name of anyone selling first-class plants in Ontario Last year I purchased 2,000 roots from a Toronto house, and they proved far from satisfactory.—(W. O. Burgess, Queenston, Ont.

I do not know of anyone who has plants of Palmetto asparagus for sale. It would be better to procure seed and grow the plants for yourself. You would then have fresh, strong plants, which you would find much more satisfactory than any you could purchase.

If you succeed in getting true Palmetto seed you should have no difficulty in growing the plants. Seeds should be sown early in the spring in rows, much the same as garden peas are sown. Plants should be ready for permanent planting in one or two years, depending on their rate of growth.

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I consider The Horticulturist one of the best papers coming to my address, and cannot afford to be without it. I have been glad to note a steady improvement, and wish the paper could be found in every country home in Canada.—(R. J. Messenger, Bridgetown, N. S.

CAULIFLOWERS AND HOW TO GROW THEM *

R. BRODIE, WESTMOUNT, QUE.

I HAVE been led to choose this subject by the number of people who ask how to grow this delicious vegetable. In growing cauliflowers successfully the first consideration is the selection of good seed. Cheap seed will generally grow poor cauliflowers.

Varieties of cauliflowers that may do well in the moist, cool climate of England, would be a failure in our warm, dry climate. I have seen some of these varieties grow three feet high without forming a head. A good strain of the Dwarf Erfurt variety is the best suited to our climate. Nearly every large seed house has special strains of the Dwarf Erfurt, named Snowball, Snowstorm, Giltedge, Alabaster, Ideal, etc.; all good, varying a little in earliness.

All farmers should know how to make a hot-bed; a few have small greenhouses. I prefer the hot-bed to start vegetable plants, as those grown in a greenhouse are apt to grow too large and spindly. In choosing a spot for a hot-bed select a place sheltered from the wind and where the glass will get the morning and afternoon sun.

TO OBTAIN AN EARLY CROP.

A good way to have extra early cauliflowers is to sow the Snowball variety the end of February or beginning of March. In about three weeks the plants will be large enough to set out into other hot-beds. Set the plants one foot apart each way. Some growers plant early lettuce between the cauliflower. The lettuce comes into use so much earlier than the latter, it does not interfere with the growth or cultivation of the cauliflower, for the soil needs to be stirred and cultivated round the plants in the hot-beds as well as in the open ground.

For early cauliflower in the open, sow Dwarf Erfurt in a moderately warm hot-bed in the middle of March. Keep the temperature down to between 60 and 70 degrees by lifting the glass an inch or two. In about three weeks set out the plants in other hot-beds three inches apart; some growers set them in two-inch pots plunged in the soil, close together in the hot-bed. These plants should be ready to set out the first week in May, as soon as there is no danger of frost. For summer and autumn, make a seed bed in the open ground. Those who grow large quantities use a garden seed drill. If the black fly is troublesome use road dust or plaster of paris. With two gallons of road dust or plaster add one tablespoonful of paris green, mix thoroughly and dust on the young plants in the morning when the dew is on them.

The soils best suited to cauliflower are black muck, if well drained, black sandy loam, or any soil that will retain the moisture. Avoid light gravely and sandy soil. My Italian neighbor took a field of poor clay soil last spring that had a stunted crop of oats and which had been full of couch grass the previous year. By plowing and grubbing till he got out most of the couch grass, then plowing in manure at the rate of 75 tons to the acre, he had a fairly good crop of cauliflowers this autumn. He is now applying as much more manure, and said to me, " With plenty of manure I can make this field all right," and he is right.

I believe there are some market gardeners in the States who condemn the use of stable manure for growing cauliflowers. These men only use commercial fertilizer. On the other hand, growers around Montreal believe they can beat the world in growing cauliflowers. Our large growers sell their best to the green grocer and butcher, the rest they sell to the pickle factories for $30 to $40 per ton. Some growers sold 50 to 75 tons.

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* A paper read at the twelfth annual winter meeting of the Pomological and Fruit Growing Society of the Province of Quebec, held at Ayer's Cliff, Que., Dec. 14 and 15.

If the soil is in a fertile condition it will not require as heavy manuring as if the land is run out and impoverished. Good results can be obtained by using one half stable manure and one half commercial fertilizer. The fertilizer should have an analysis of 10 per cent. phosphoric, 10 per cent. potash, and 5 per cent. ammonia, using 800 to 1,000 pounds per acre along with manure. A good way to apply the fertilizer is to sow one half broadcast. Of the other half put a handful around each plant, but be careful not to touch the plant for fear of injury. The fertilizer around the plant will prevent the cut worm and help prevent the fly that causes the maggot depositing an egg on the stem.

When preparing the land to set out plants be sure and plough deep. Some growers have a drag like a heavy iron rake, attached to the plow, to level the furrows and prepare the land in one operation. Make the rows three inches apart and set the plants 18 inches apart in the row. It is best to have a marker to mark four or five rows at a time. It is always best to set out plants in the afternoon so as to avoid the heat of the morning sun. This is not necessary if the weather is cloudy and threatening rain. If the weather should be dry at the time of setting out the plants it is best to water them.

Cultivate often; never let the soil get baked round the plants. As soon as the head begins to appear it needs to be shaded immediately from the sun. Go over the field every morning and bend the leaves over the head. Sunburnt cauliflowers bring very poor prices. Plants that do not head up before frost should be pulled. Leave all the soil that adheres to the roots and set them up close together in a root house or cellar. In this way I have had cauliflowers right into the New Year. One ounce of seed should produce about 3,000 plants and costs $2 to $5 per ounce.

THE CULTIVATION OF MUSHROOMS

THE United States Department of Agriculture has recently published Farmers' Bulletin No. 204, on "The Cultivation of Mushrooms," by Dr. B. M. Duggar, Professor of Botany in the University of Missouri, Columbia, Mo. In the letter of transmittal Dr. B. T. Galloway, Chief of Bureau of Plant Industry, says: "Under the direction of the Pathologist and Physiologist of this Bureau, Doctor Duggar has been engaged for several years in the investigation of mushroom culture in all its phases, and great advances have been made, especially in the production of purer and better spawns."

On this side of the Atlantic most people are quite unfamiliar with the practical cultivation of mushrooms. The few that are grown here are seldom displayed in the public markets, because they are usually sold to special customers in advance, and at what may be considered very fancy prices. Indeed, it is hard to understand, considering the prevailing prices, why mushrooms are not grown in greater quantity. Some idea of the magnitude of the industry around Paris, France, may be obtained from the figures given in the bulletin. In 1898, 3,960,000 pounds of mushrooms passed through Central Market of Paris, while in 1901 the quantity was more than double this, 9,680,000 pounds. It is not so stated in the bulletin, but it is known that about two-thirds of the French crop is preserved and exported to American countries.

Persons who grow mushrooms have three fundamental conditions to observe: (1) Character of the spawn used, (2) proper composting of the manure, and (3) control of the temperature and moisture of the beds. All these points are discussed by the bulletin in a simple practical way.

That part of the bulletin which will most interest practical mushroom growers is the announcement of new and improved methods of spawn growing. Two methods of securing the coveted "virgin spawn" are described. The first is the artificial germination of spores. By this method one will be able to select spores from particular mushrooms, which by constant selection may give superior varieties. Another line of development discovered by Dr. Duggar yielded even better results than the Sporeculture process. It may be termed the "Tissue Culture" method. This method is comparable to the use of "Cuttings," as practised by the nurseryman in propagating superior sorts of fruits, and its use in growing mushrooms has been marked by the same improved results. This process renders it possible to select mushrooms of a given character, or to select toward a given end, with the same certainty growers may select the seed of other crops commercially grown.

THE CULTURE OF POTATOES *

W. T. MACOUN, HORTICULTURIST, CENTRAL EXPERIMENTAL FARM, OTTAWA.

THE potato is one of the most important food products of Canada and one of the commonest articles of diet. In the province of Quebec alone, when the census of 1901 was taken, there were 127,205 acres devoted to this crop, producing 127,135,739 bushels, or about 135 bushels per acre. The potato can be obtained at all seasons of the year, and if properly kept is about as good at one time as at another.

There is no farm crop which will repay good culture as well as the potato nor any of which the crop can be increased so much. A few more bushels per acre may be added to the wheat and oat crop by careful husbandry, and the crop of turnips and mangels may also be slightly increased, but the percentage of increase in all of these is much less than in the potato. The average yield per acre of potatoes for the province of Ontario for the year 1904 was 116 bushels, and for the past 22 years 115 bushels, while in the United States it is under 100 bushels per acre. Yet it has been proven by careful experiment that over 1,000 bushels per acre can be produced. An authentic experiment has shown that from a one-twentieth acre plot potatoes were grown at the rate of 1,061 bushels per acre. At the Central Experimental Farm the greatest yield that we have been able to obtain has been at the rate of 690 bushels marketable potatoes, or a total crop with the unmarketable potatoes of 772 bushels. This was from the old Peachblow; not a desirable variety, on account of deep eyes and inferior quality. One thousand bushels per acre is something to aspire to, and it is to try and make clear to farmers that the crop can be increased very much by proper methods that this paper is presented.

The tubers are not the roots of the potato, but are the tips of swollen underground stems, the eyes being the buds; hence the tubers have little to do with the development of the plant, but the development of the root system of the plant and the consequent development of the top has much to do with the development of the tubers. As heat is very essential in growing potatoes, it is important that the soil should be warm. For this reason, sandy loam and gravelly soils which are naturally well drained have been found the most suitable, but the largest crop will be grown where the soil is naturally moist, but has not too cold a subsoil. As the conservation of moisture is naturally well drained and not very moist soil is very important for the best success of potatoes, every effort should

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* Extract from an address delivered at the twelfth annual convention of the Pomological and fruit growing Society of Quebec, he at Ayer's Cliff, December 14-15. The remainder will be published in the spring when most seasonable.

be made to retain it. It is a good plan to have the potato crop follow clover or grass sod, as the sod when turned under forms humus, and the more humus there is in the soil, the more it will retain moisture. This vegetable matter will also help to keep the soil loose, which is another factor in the growing of the crop.

The best method is, if the soil is loamy, to plow early in the spring, so that the sod will be thoroughly rotten, and then use the disc harrow and smoothing harrow thoroughly just before planting. By plowing in the spring, plant food is saved which might be lost by leaching. Stiff soils, which, if possible should not be used for potatoes, may be plowed in the autumn. The looser the soil is at planting time the better the results will usually be. Farmers make a great mistake by manuring heavily for potatoes. A moderate top dressing of barnyard manure of 10 or 15 tons per acre on the sod before plowing is quite sufficient to ensure a good crop if cultivation and spraying are attended to. If these are neglected heavy manuring is of little avail. I believe thorough cultivation to be more important than manuring.

Very satisfactory results have been obtained at the Central Experimental Farm by having the potatoes follow a root crop which was well manured and by not applying any manure direct to the crop. Manuring in the rows induces scab and should be avoided. The time of planting will vary according to the district, but the best time to plant for a main crop is about a week before the danger of frost is past, the object being to have the potatoes come up just about when danger of frost is over. From the middle to the 24th of May is a good time. In 1902 in a test made of planting potatoes at different dates an early variety planted on May 15 yielded at the rate of 294 bushels per acre, and when planted on May 29 of only 217 bushels, a difference of 77 bushels in favor of May 15. A late variety yielded at the rate of 459 bushels per acre when planted May 15, and 411 bushels when planted May 29, a difference of 47 bushels in favor of the earlier planting. Potatoes planted on May 1 did not yield as well as those planted on the 15th, the soil probably being too cold. The longer the plants are growing before blight appears the better the crop is likely to be. For an early crop the seed can be planted earlier and some risk taken. Anything which retards the growth of the plant lessens the crop, hence danger from frost should be avoided for the main crop.

In 1904 there were 73 varieties tested at Ottawa under as nearly uniform conditions as possible. The most productive variety was the Vermont Gold Coin, which yielded at the rate of 554 bushels per acre, and Morgan's Seedling, which produced 514 bushels. Both were new varieties. The third most productive variety, and one which we have been recommending for several years, was the Carman No. 1, which yielded at the rate of 501 bushels per acre. Three of the least productive varieties were Early Andes, 123 bushels; Bliss Triumph, 127 bushels, and Bovee, 180 bushels, or 431 bushels per acre more from the heaviest yielding variety than from the lightest cropper. These great differences are obtained every year, showing the importance of trying different kinds. Some of the best varieties are distributed free from the Central Experimental Farm, Ottawa, in 3 pound samples.

The 12 varieties which have averaged best at Ottawa for the past five years, with their yields per acre, are:

	Bush.	Color.
1. Late Puritan	485	White.
2. Barnaby Mammoth...	483	Pink and white.
3. Money Maker.......	482	White.
4. Flemish Beauty.....	467	Pink.
5. Carman No. 1........	459	White.
6. Dreer's Standard.....	458	White.
7. Sabean's Elephant...	454	White.
8. Canadian Beauty.....	452	Pink and white.
9. Rural Blush..........	437	Pink.
10. I. X. L.	433	Pink and white.
11. Clay Rose...........	432	Pink.
12. Irish Cobbler.........	432	White.

An Established Industry

S. WARD KENNEDY, LEAMINGTON, ONT.

EARLY vegetable growing in Essex county is an established industry. It has been proven to be extremely profitable by some well-known growers. The work is on a satisfactory basis and will warrant a considerable increase, but I do not believe in exceptional cases of success being cited to mislead the public. There is considerable risk in the work, and those not understanding the raising of plants under glass can easily lose a great deal of money.

Hot air, hot water and steam have been tested for heating greenhouses and the results have been published. All have proved practically successful if rightly installed, the choice resting with the amount of glass and sash at one's disposal. It is possible useful experiments might be carried on to determine whether to plant seeds early to grow slowly; or to plant later, thereby saving fuel, and growing them a little faster. Should plants be fed quite heavily, in the greenhouse, with nitrogen, phosphoric acid, and potash is a point on which there is some doubt, and experiments might be carried on in the field to determine how much fertilizer or fertilizers can be used profitably with regards to ripening, as a difference of 10 to 14 days is often the difference between profit and loss.

The Cabbage Black Rot Germ

THE Vitality of the Cabbage Black Rot Germ on Cabbage Seed, is the title of a bulletin recently issued by Messrs. H. A. Harding, F. C. Stewart and M. J. Prucha, of the New York Agricultural Experiment Station. Black rot of cabbage is a distinctive bacterial disease for which no satisfactory method of controlling it in the field has yet been found. Concerning the ability of the disease germs to survive the winter on the seed, there has been a difference of opinion. The bulletin gives an account of some investigations bearing on this point.

Rev. Father A. E. Burke

The success of the ninth annual convention of the Prince Edward Island Fruit Growers Association, held Dec. 20 and 21, at Charlottown, P.E.I., and described in this issue, was due in a large measure to the energetic and capable efforts of the president, Rev. Father A. E. Burke, of Alberton, P.E.I., who is well known to readers of The Horticulturist.

The conclusion is that much of the cabbage seed on the market is contaminated with germs of the black rot disease and that some of these germs may survive the winter and become a source of infection to the young cabbage plants. As a precautionary measure, it is advised that all cabbage seed be disinfected before sowing, by soaking for 15 minutes in a 1-1000 corrosive sublimate solution or in formalin, one pound to 30 gallons. It is not expected that this treatment will prevent either leaf or root infection in infected soils; but it may be safely relied on to prevent all danger from infected seed. It will not injure the germination.

Send us a card if you are not receiving The Horticulturist regularly. We will attend to it.

The Canadian Horticulturist

The Only Horticultural Magazine in the Dominion.

H. Bronson Cowan, Editor and Business Manager.

1. **The Canadian Horticulturist** is published the first of each month.

2. **Subscription Price** $1.00 per year, strictly in advances entitling the subscriber to membership in the Fruit Growers' Association of Ontario and all its privileges, including a copy of it, report. For all countries except Canada, United States and Great Britain add 50c for postage.

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THE CANADIAN HORTICULTURIST,
TORONTO, CANADA

That its readers will succeed in keeping all their New Year resolutions and thereby make 1905 the happiest year they have ever known, is the hearty wish of The Canadian Horticulturist.

THE FRUIT DIVISION.

The great majority of fruit growers are unanimous that the Dominion Fruit Division should be continued as a separate division and not amalgamated with the dairy division. The Prince Edward Island Fruit Growers' Association, at its annual convention last month, unanimously carried a resolution condemning the proposal to place the fruit division under the control of the chief of the dairy division. Ontario fruit growers are opposed to the proposed move as is evidenced by the interviews with leading growers published in this issue. As it has only lately become known that such action was under consideration, fruit growers generally have not had time to give expression to their views. Enough growers, however, have been heard from to show there will be bitter opposition to any action which is likely to curtail the work of the Fruit Division. Should the two divisions be united, fruit growers have expressed a determination to immediately endeavor to have the divisions separated again at the earliest possible moment.

This feeling is not the result of any objection to Mr. J. A. Ruddick, the chief of the Dairy Division. The fact is very few growers are acquainted with Mr. Ruddick or his work. The general feeling is that the fruit interests are of sufficient importance to require a division of their own and that the head of that division should not be forced to consult with the head of another division, but that he should be subordinate only to the Hon. Sydney Fisher, Minister of Agriculture.

AN UNSATISFACTORY METHOD.

Did any person ever know of a wholesale merchant forwarding supplies to retail firms with a request that they sell the goods to the best advantage and, after deducting the customary commission, return the balance of the proceeds to him ? Has a business man been heard of who was willing to ship his season's stock of goods hundreds of miles to be sold by utter strangers with the right to make their own returns ? Such a person would not be called a business man.

Fruit growers are an intelligent class of men and yet this is what hundreds of them do every year. While the weakness of this method has long been apparent the matter has never been brought home more forcibly than during the past six weeks. The statement was made by Mr. Robert Thompson, of St. Catharines, at the recent Ontario Fruit Growers' convention, that while in Winnipeg last fall he found cases where the commission men had reported to Ontario growers that their fruit had sold for considerably less than had actually been the case. Not having any proof to the contrary the growers had been forced to accept payment on the basis of the prices quoted by the commission men.

Following this has come the announcement from Boston that a coterie in England has systematically banded together for several years to secure the product of Canadian and United States apple growers for little or nothing. Fruit sold at public auctions is bought in by these parties and resold at much higher prices. The growers who consigned the fruit receive their returns on the basis of the prices realized for the fruit at the public auctions. It is necessary that steps shall be taken to prevent fraud of this kind. In England the Canadian Commissioner should take this matter up. Our Canadian commercial agents should also watch to see that the interests of Canadian growers are safeguarded. In Canada it has been suggested that commission merchants should be placed under Dominion regulations. The Canadian Horticulturist would like to receive suggestions from growers as to what they believe should be done.

THE VEGETABLE GROWERS.

What are the hundreds of vegetable growers in Canada doing ? Have they a Dominion organization or provincial associations of any kind. If not, why not ? If they have what are they doing ?

There is no department in The Horticulturist for which it is more difficult to obtain live, interesting information than the vegetable section. This department should be one of the strongest. Vegetable growers should be as well organized and should hold as many meetings and conventions as the fruit growers and florists. Speak up, vegetable growers, and let us know what you are doing.

FROM FAR AND NEAR.

If the good that is done by The Horticulturist as it goes forth every month, is in comparison to the territory covered, it does indeed fulfil its mission to the very full. During the past month subscriptions and renewals have been received from Finland, South Africa, Tasmania, Switzerland, and Belgium, with one as far south in the United States as Georgia.

Our advertising columns are sought by firms as far away as Mexico, one firm sending us an advertisement from that country, which appears for the first time in this issue. Truly does Spakespeare say, "How far doth the little candle throw its beams, so shines a good deed in a naughty world." This does not necessarily mean that we consider the world not what it should be.

It has been the custom in New England and in several of the other eastern states, for a few years past, to place on the door of a house, at the time of death in a family, a wreath or bouquet of flowers. In the case of the death of an infant this sign of mourning is of smaller dimensions and consists of small white flowers. For older persons larger bouquets are used, or mere bunches of loose flowers tied with white ribbons. An excellent emblem often used is a wreath of ivy leaves, or a sheaf of wheat tied with white ribbon. These floral emblems are much less gruesome than the customary crape or ribbon decoration furnished by the undertaker. Would it not be a good idea to adopt this custom in Canada ?

Horticultural societies when planning their work for 1905 should arrange to subscribe for The Canadian Horticulturist for all their members. Many societies do this every year and more should. The Horticulturist can help the societies and the societies can help The Horticulturist. Officers of societies should bear in mind that The Horticulturist is the only horticultural magazine published in Canada and that it is the equal of any of the kind published in the United States.

The Quebec, Nova Scotia and Prince Edward Island Fruit Growers' Associations held successful conventions last month. Let us unite in a hearty wish that the convention to be held this month by our British Columbia brothers will be the best of all.

I greatly enjoy The Canadian Horticulturist and think it very instructive to fruit growers. —(A. N. Ball, Port Hope, Ont.

Prince Edward Island Fruit Growers

(Continued from page 6.)

The exhibition of fruit was a surprise to every one, as all past exhibits at meetings of the association were eclipsed by this one. Fully 500 plates of Island fruit were shown, in addition to which were the provincial collections from Nova Scotia, Ontario and British Columbia, shown by the Dominion Fruit Division ; a large number of varieties from the Experimental Farm, Nappan, and a splendid exhibit of boxes and barrels. The visitors from Ontario admitted that with the exception of the recent fruit show at Toronto the exhibit of fruit at Charlottetown was equal to any that has been held in recent years in connection with the Ontario Fruit Growers' Association.

The great adaptability of the different parts of the Island for growing apples was demonstrated, both the eastern and western parts of the province being well represented. Kings county, which has in the past taken a large proportion of the prizes, was beaten in the county collection class by Princes county, which exhibited a fine lot of well grown fruit.

One could not but notice the varieties which are succeeding best on the Island, by the large number of plates which were in competition and by the color and maturity of the fruit. Among these King, Spy, Ben Davis, Alexander and Gravenstein would certainly rank highest. The competition in Kings was very keen, the fruit being well matured and highly colored. A large number of plates of Spy were shown, and while the color of these was not as high as the King, the fruit was clean and well grown. Ben Davis is a great favorite on the Island. There was a large number of plates of Alexander. This variety succeeds especially well on the Island. The Gravenstein were in prime condition. Some fine plates of Baxter, Bishop Pippin, Mann, Ontario, Ribston Pippin, Blenheim Pippin, Stark, Wagener and Wealthy were shown, all of which varieties do well on the Island. Baldwins and Greenings were not so good, and it is doubtful if the former, especially, will prove a profitable commercial apple.

The exhibit of fruit in boxes and barrels was good. The Gravenstein took first prize in boxes, and the King in barrels. The Baxter is an apple which is succeeding admirably on the island and is proving a profitable variety with those who grow it. The Dodd apple appears to be a winter sort well worth looking after, as the specimens shown at the exhibition were of fine color and good quality, and it is a variety which has been tested for many years on the Island. On the whole this Fruit Growers' meeting was an inspiration to stranger and Island folk alike, a striking testimony to the president and an augury of the triumphant success of horticulture in the garden of Canada.

Have just read the December issue of The Horticulturist. It is brimful of interest. My congratulations and best wishes for future success.—(J. C. Chapais, St. Denis, Que.

THE WINNIPEG FRUIT MARKET

During the recent shipping season a number of leading Ontario fruit growers were at a loss to know whether or not to ship fruit to Winnipeg. Commission firms, which have been established in Winnipeg for many years, would write, discouraging shipments, while in the same mail letters would be received from other firms asking for consignments.

The disturbing factor on the market appeared to be the branch of the Ottawa Fruit & Produce Exchange, recently established in Winnipeg. This concern was apparently fighting for the field against the old firms.

Desiring to locate the trouble, if possible, The Horticulturist wrote to a number of leading Winnipeg commission dealers for information concerning that market. The following reply has been received from one of the best known firms in that city with a request that the name of the firm should not be published.

SELLS FRUIT BY AUCTION.

The Ottawa Fruit & Produce Exchange is a competitor of ours only in a different way. The Exchange puts the goods up by auction and sells them, regardless of cost and value, to the highest bidder. They have men throughout the country soliciting orders and no doubt get a good many fresh shippers, but it is very doubtful if any of the shippers will be satisfied, or, if they are satisfied, they are easy to please.

The Exchange is run under the direction of G. W. Hunt, of Ottawa. I will give you a few of the prices that it realized here for fruit. When we were paying shippers $1.75 for Duchess apples in Ontario (the freight all rail is practically $1 per barrel) Mr. Hunt sold his XX for $1.55 to $1.75 per barrel and XXX for $2.25 to $2.65. Tomatoes in baskets were sold for 30c to 50c per basket and pears for 40c to 75c. They came by express. We were not handling any of those goods, but we understood from the representative of Griffith & Woolverton, of Grimsby, that they were paying in the east 40 to 60 cents for tomatoes and the same for pears. Mr. Hunt last spring handled a few cars of oranges from California for which the growers did not realize more than 30 to 50 cents a box.

I point out a few of these things just to demonstrate that this city is not ready for auction fruit. If it is ready, we are prepared to go out and solicit fruit, sell it by auction and do the same kind of business as the Ottawa Fruit & Produce Exchange does, if the growers want it in that way, but we think they will soon become tired of it because fruit has a cost, and it must cost the growers something. Peaches and plums from Ontario will not carry here; apples, grapes, tomatoes and basket pears find a ready market for a limited amount.

THE OTTAWA FRUIT AND PRODUCE EXCHANGE.

The following statement was received from Mr. Wm. Borthwick, manager at Winnipeg for The Ottawa Fruit & Produce Exchange :

We opened business in Winnipeg, March 1 last, with the object of doing a strictly commission business. On account of the large number of orders we have had from dealers in other towns outside of Winnipeg, we have been obliged, in order to fill some of these orders, to buy small lots of goods. At least 90 per cent. of the goods we have handled have been on a strictly commission basis.

Our goods are all sold by auction as soon as, or as quickly as possible after they arrive. Our sales have been well patronized, from the time we commenced business, by the best dealers of this city and the surrounding country, and the attendance has steadily increased until the premises, which seemed large when we first began, are entirely too small.

Our terms to those who buy our goods are strictly cash, and for those who consign goods to be sold we charge 10 per cent. commission and pay every Monday for goods sold the previous week up to Saturday night. The best evidence I can give that we are getting the best price going for the goods is the fact that nearly every person who has come up here lately with fruit to sell has handed their goods over to us to dispose of.

With regard to Ontario fruit I have been surprised to find that there has been such a prejudice worked up against it, but I have no doubt that, with better transportation facilities and a little care on the part of the grower, Ontario will soon control the fruit supply of this market. There is great need for improvement in the matter of transportation, especially with the express company, for the facilities furnished by them and the manner in which goods are handled here would not be tolerated in the east for one day.

Packing Apples in Boxes.

J. B. THOMAS, LONDON, ENG.

There has been a good deal said about packing in boxes, but I cannot advise the use of this style of package, although in seasons of scarcity it might be adopted with some chance of success. When, some years ago, I suggested the advantage of packing in boxes I had in mind the manner and style of packing adopted in the case of Californian Newtons. I have since observed the Canadian attempts at packing in boxes and, with very few exceptions, I may say that the less we see of such boxes and such packing the better for those interested in shipping apples from Canada. At present I must urge packing in barrels only, as this style of package is best known here and best understood in Canada.

Has Been Disappointing.—Taking everything into consideration the quality of the Canadian fruit this year has been very secondary. This has occasioned much disappointment to importers, who from early reports expected to see a crop of fine fruit.—(Clark & Sinclair, Dundee, Scotland.

Success to your excellent Horticulturist.—(R. S. Hood, Galt, Ont.

THE NIAGARA DISTRICT FRUIT GROWERS

The Niagara Peninsula United Fruit Growers' Association held a profitable meeting in St. Catharines about the middle of December. The president, Mr. C. M. Honsberger, presided, and a large number of members were present. The following were elected officers for the coming year: President, C. M. Honsberger, Jordan Station. Vice-presidents, Joseph Tweedle, Stoney Creek; A. Muir, Niagara Township; A. Railton, Fonthill. Secretary-treasurer, Carl E. Fisher, St. Catharines. Executive committee—F. Pay, W. C. McCalla, W. H. Bunting, St. Catharines; Robert Thompson, W. H. Lee, Geo. A. Robertson, Alfred Griffin, Grantham; F. A. Goring, Major James Hiscott, Isaac Usher, Niagara; Thomas Berriman, Stamford; E. Morden, Niagara Falls South; Wm. M. Hendershot, Thorold; S. H. Rittenhouse, Jordan Harbor; Andrew Haynes, Camby Wismer, Louth; Rev. W. J. Andrews, S. M. Culp, Beamsville; A. H. Pettit, C. W. Vanduser, Grimsby; M. Pettit, J. W. Smith, Egbert Smith, Winona; Erland Lee, Stoney Creek.

A comprehensive and instructive report was presented by Mr. Robert Thompson on the results of the investigations into the San Jose scale. Most of this information has already appeared in The Horticulturist. Mr. W. H. Bunting, of St. Catharines, stated he thought the experiments made bore out the results obtained by tests of a similar nature carried on in other parts of the continent. He stated that the McBain mixture has been used with good results, but for smaller orchards he thought lime and sulphur the more applicable.

On motion it was decided not to ask the government for further aid in supplying material for experiments. This action was objected to by Mr. Murray Pettit, of Winona, who pointed out that the black rot of grapes is causing trouble and that government assistance may prove desirable. Mr. Pettit moved in amendment that the government be requested to continue its aid. This amendment brought out a lively discussion, but was finally withdrawn and the resolution to adopt the report carried. A committee of some of the most prominent growers was appointed to interview the government and request that assistance be granted in fighting other blights which threatened the fruit crop of the district.

A lively address on Cooperation was given by Prof. Reynolds, of Guelph, who presented a resume of the results of trial shipments of fruit to the west. An account of these shipments has already been presented in The Horticulturist. In closing, Prof. Reynolds stated that the obstacles to a trade with Manitoba and the Northwest are:

First, Ontario fruits are not of good shipping quality. Second, transportation is not satisfactory. Third, markets are uncertain and commission men and others who handle our fruits do not always give satisfactory returns.

The various difficulties in the way of establishing this business can be overcome for the average fruit grower in no other way than by cooperation. Cooperation will give the fruit growers strength to deal with the railway companies, to compel from the latter proper regard for their rights, and, furthermore, the added business which would result from cooperation would make it appear to the railways more and more worth while to give the matter of fruit transportation the attention it will then deserve. An organization will be able to grapple successfully with the problems of marketing, which it is difficult, if not impossible, for the private shipper to do. At the shipping point the cooperative concern could take charge of the selection of the packages, grading, packing and shipping of the fruit, thus relieving the individual fruit grower from the necessity of attending to these exacting details, and giving him time to attend to his legitimate business of producing prime fruit.

Should Take The Horticulturist.

The directors of the Lindsay Horticultural Society offer to their members for 1905 the following advantages:

Each of the first 100 persons (only) who pay the sum of $1 on giving in their name to the secretary, will receive the following collection of choice plants and bulbs for pot culture during the winter: One azalea, two cyclamen, assorted colors, three of the best hyacinths in assorted colors, or one althea, one hibiscus and one perennial larkspur, to be delivered in the spring of 1905. The choice of any of the following journals free, is given: (a) The Canadian Horticulturist, a 52-page illustrated monthly, devoted to fruit, flowers and vegetables. This choice includes membership in the Ontario Fruit Growers' Association, and the combined annual report of the Fruit Growers' Association and the Entomological Society of Ontario, a book worth to those interested in fruits and flowers, more than the membership fee. (b) The Mayflower, a bright, interesting journal devoted to fruit, flowers, birds and other interesting subjects. (c) The Lindsay Watchman-Warder for one year, containing the news of the town and country, with articles interesting to fruit growers and gardeners in general. (d) Success with Flowers, a monthly journal devoted to flower culture.

Work in Grimsby.

During the winter the Grimsby society aims to have discussions on fruits and flowers,. the meetings taking more of a literary character than during the summer, when social sessions are more in order. Members are taking deep interest in flowers, gardens are becoming larger and more beautiful every year, and greater strides will yet be made stimulated by the increased interest and enthusiasm evinced by the members of the society.—(J. W. Brennan, Grimsby Hort'l Society.

Have Bought Barrels.—The Forest Fruit Growers' and Forwarding Association has bought the material for making apple barrels for next season. The barrels will cost the association 26½ cents made up.

HORTICULTURAL SOCIETIES AND THEIR WORK

At the meeting of the delegates from horticultural societies of Ontario, held in Toronto at the time of the Fruit, Flower and Honey Show, interesting descriptions were given, by a number of the delegates, of the lines of work being carried on by their societies.

The secretary of the Hamilton society, Mr. J. M. Dickson, reported that his society made a distribution of aster seeds to over 3,000 school children, with very satisfactory results. At a flower show held in September the flowers brought in by the children were numerous and beautiful, some very fine specimens of asters being exhibited. During 1903 the work of improving lawns, grounds around houses, parks, etc., was undertaken, and in 1904 the competition was more keen than ever. In this work the Hamilton society has been especially successful. Prizes were offered for best kept lawns, rockeries, hanging baskets, window boxes, general improvement, and for keeping places clean. The result has been that where formerly in Hamilton one used to stop and admire a beauty spot of this kind, he now stops and gazes with astonishment at a neglected corner or nook. The fact that the streets and walks in the city have all or nearly all been paved during the past few years has helped greatly to improve the looks of the grounds, and it has left places between streets and houses, where grass or flowers have been planted.

The Work in Cobourg.

The Cobourg society was represented by Major A. J. Snelgrove, who reported that three years ago his society adopted the plan of giving seeds to their members, with very satisfactory results. These seeds were distributed early in the spring. The best aster seeds procurable were obtained and given to the children of both public and separate schools. Instructions were given to the teachers asking them to see that the scholars were shown how to plant and care for the seeds and plants. Prizes were offered for the best specimens of flowers from these seeds. These flowers were exhibited in September and furnished one of the finest flower shows ever held in Coburg.

The prizes consisted of small sums of money, bulbs, seeds and potted plants. This plan of giving seeds and then offering prizes for the flowers grown does really more for the children in the line of Nature work than most other lines of work. The Coburg society is anxious to promote a civic spirit for the development of the public beauty of the town and is succeeding.

Toronto Horticulturists.

The president of the Toronto Horticultural society, Mr. Edward Tyrrell, gave a few remarks concerning his society. No premiums or seeds were given to members last year. Meetings are held every month at which plants in bloom are shown. Certain kinds of plants are allotted so many points of merit. Judges determine how many points each plant has earned. These points are recorded and every point is worth ten cents to the owner of the plant. Some plants score as high as twenty points, others but ten and below. Every one bringing a plant to the meeting has an interest in the meeting and a prize is given appropriate to the value of his plant.

This plan makes it an incentive to the members to strive for the best they can obtain, and has been found to result in much good and to keep up the interest which otherwise is found to lag at certain seasons of the year. The society has 114 members and is in a prosperous condition.

P. G. KEYES, OTTAWA.

Much of the success of the Ottawa Horticultural Society, particularly during the past year has been due to the efforts of the president, Mr. P G. Keyes, who has been a member of the Society since its organization, sixteen years ago. Mr. Keyes holds an important position in the Department of the Interior. His specialty in horticultural lines is grape culture. For years he has taken the first winnings at the Central Canada Exhibition in the grape sections. The cold climate of Eastern Ontario has not prevented Mr. Keyes making a success of his grapes, and in this respect his winnings have been most remarkable.

What Deseronto Horticulturists Have Done.

The first year of its organization, the Deseronto Horticultural Society followed out the requirements of the Agriculture and Arts Act. The board of directors chose plants which were given to members. This plan, the president Mr. McClew, reported caused much dissatisfaction. Some members wanted bulbs, some plants and some seeds. Each member is now allowed to choose any plant or bulb, as shown in a selected florists' or seedsmens' catalogue, up to a certain price, both for spring and fall distribution. This year the amount stipulated was $1.35 for each member.

The first year the Deseronto society was organized, a flower show was held, and this feature has been continued every year since, with most successful results. Not only have the members been interested, but the town has been improved. Prizes have been given for the best kept grounds, which have added to the interest among members.

Guelph Horticulturists Are Active.

The Guelph society has followed the same lines of work as many other societies in the giving of seeds, plants, bulbs, etc., to members and school children. One mistake was found to be a detriment to good results, and that was in not obtaining the cooperation of the teachers when giving plants and seeds to the children. Both ways were tried by this society, and the added interest of the teachers adds much to the good results obtained.

This year 400 packages of aster seeds were distributed through the teachers to the children, and when the exhibition of the flowers was held in the fall the teachers, with their classes, were there with 373 entries from the 400 packages of seeds distributed. Nearly every child that took seeds brought something in return. Prizes consisting of hyacinths and narcissus bulbs, tulips, etc., were graded according to the value of the specimens. For the culture of the asters, little two-page pamphlets with cultural directions were distributed Four bulletins were issued by the society during the year. Aside from the distribution to the schools, bulbs for fall planting were given away, as well as plants for spring planting. These latter consisted of sweet peas and rose bushes. Members take a deep interest in the specimens they secure and competition is keen as to who shall grow the finest. Eight meetings were held, at four of which speakers from all over the province spoke.

The Delegates Present.

Among the delegates at the convention were noted the following: Messrs. W. M. Robson, Lindsay; C. W. Schierholtz, Elmira; Major Snelgrove, Coburg; D. McClew, Deseronto; John Cape, Hamilton: A. K. Goodman, Cayuga: J. Cavers, Oakville; Jas. J. Scarff, Woodstock; R. B. Whyte, Ottawa; W. T. Macoun, Ottawa; H. L. Hutt, Guelph; Allan Cameron, Owen Sound; J. W. Brennan, Grimsby; Edward Tyrrell, Toronto; Miss J. S. Campbell and Miss J. Douglas, St. Catharines; David Rife and Edward Gurney, Hespeler; J. Evans, Randolph; G. M. Hill, Fruitland; Alex. T. Armstrong, Millbrook; John McLaren, Orangeville; J. O. McCullcch and J. M. Dickson, Hamilton; Jas. Symington, Port Dover; Allan McNeillage, Eberts; E. E. Adams, Leamington; John Aikin, Sarnia; C. Firth, Durham; S. E. Wedden and W. C. Reid, Belleville; Robert Hamilton, Grenville, Que.; J. C. Chapais, St. Denis, Que.; Roderick Cameron, Niagara Falls, and H. H. Groff, Simcoe.

J. F. WATSON, OTTAWA.

Since 1898 Mr. J. F. Watson has acted as secretary of the Ottawa Horticultural Society, giving much of his time and energy to the work and improvement of the society. As the society has grown rapidly, the duties of secretary have increased in proportion, but Mr. Watson has always been equal to the situation His efforts have been duly appreciated, as is shown by the fact that he has been duly re-elected for six successive years For eleven years he has been employed in the horticultural division of the Experimental Farm, and for five years was superintendent of horticulture at the Central Canada Exhibition. There is no more popular or hard working officer connected with the Ottawa Horticultural Society.

Ottawa a Progressive Example

It has already been made known through The Horticulturist, the good work being done by the Ottawa Horticultural Society. Monthly meetings are held throughout the year. Lectures are given at each of these meetings by capable speakers. During the past two years bulletins have been issued, the one this year on Bulbs receiving general commendation. The society considers it a wise plan to give plants and seeds, and then ask the members for their experience with the same. Cannas, geraniums and perennials are usually given and the money is considered well spent.

Some inducement must be offered to the greater mass of people in general to have them take an interest in the matter. It costs the Ottawa society about $3 a year per member for the plants, etc., given them. The society has 246 members, which large number is partially accounted for by the giving away of these plants every year. The society starts work for 1905 with a balance in the treasury of $28, and considers itself stronger and better than ever before since organization. Much good has been done the city of Ottawa by its horticultural society. The standard of flowers, and all pertaining to horticulture has been raised, and the people taught to look on them as a necessity rather than a luxury. At the exhibition held this year there were 900 entries.

Notice to Subscribers

Several thousand readers of The Canadian Horticulturist are members of horticultural societies. The subscriptions of these readers expired with the December issue and they have been sent copies of the January issue in the hope that they will continue to be members throughout 1905. Members of societies who desire to receive The Horticulturist regularly should renew their membership in their local horticultural societies immediately as otherwise their subscriptions will be discontinued with the February issue. The Horticulturist has been greatly improved during the past year and will be further improved this year. The management hopes that all its readers will continue as regular subscribers during 1905.

New Work for Fruit Experimenters

At a meeting of the Board of Control of the Fruit Experiment Stations held recently at Guelph, several very important decisions were arrived at which, it is hoped, will lead to even more valuable reports being received from the stations than in the past. As a result of the disasters which again overtook the peach growers in Essex, due to the extreme winter, the Board decided that something should be done at once to assist those who desired to replant.

It was felt that the use of cover crops should be encouraged, and their effect on freezing of the soil, ripening of wood growth, etc., thoroughly tested. With this object in view five acres at the Essex Experiment Station, on the farm of Mr. W. W. Hillborn, will be set out this spring with about ten of the best varieties of peaches for that district in lots of 100 of each variety. Extensive experiments will be carried out to find the value of the hairy vetch, crimson and red clover, rye, etc., as cover crops. An additional test as to hardiness of plum roots for peach trees will be carried on by having ten trees of each variety budded to plum stock.

The Essex district is one of the best fruit sections of Ontario and it is hoped that some definite results may follow these experiments at Mr. Hillborn's. The peach industry there received a decided set back by last winter's

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freeze, and the Board could not make a better move than they are thus doing through this station to re-establish the confidence of the growers.

It has been felt that the stations have carried on tests of several of our most important fruits for a sufficient length of time (over 10 years in most cases) to be able to speak with authority for their several districts. Last year, as a result of these tests, a partial list was prepared and published in the annual report showing the most valuable varieties of apples for Ontario. All of the stations will now be supplied with a compete set of these recommended varieties and many of the poor varieties will be destroyed or top-grafted as being unworthy of further test. While the stations will still specialize as in the past, it is hoped that each experimenter will have a small collection of the standard varieties of each fruit as recommended by the Board, so as to know from experience their adaptability in his own district.

WILL TEST FRUIT IN NEW ONTARIO.

The Board is arranging to send several farmers in the Temiscamingue and New Liskearn districts a collection of small fruits and some of the hardier trees for trial. The conditions of soil and climate in these new and promising sections of Ontario have been found to be so varied it was thought better to conduct experiments in several portions of the country till more definite information as to the existing agricultural conditions can be obtained. From specimens of fruit, both wild and cultivated, which have been grown there, the Department of Agriculture hopes that many of our hardier varieties of tree fruits, and most of the small fruits, will be found to succeed with proper care.

During 1905 two exhibits will be made, one at the Canadian National Exhibition in September, and the other at the Provincial Fruit, Flower and Honey Show in November. The former will be largely shown in commercial packages and should be an object lesson not only to the fruit grower, but also to the consumer. An interesting collection of injurious insects and fungi will also be shown in connection with both exhibitions.

Nova Scotia Fruit Growers Are Wide Awake

(Continued from page 7.)

An interesting discussion was led by Mr. W. H. Woodsworth, of Berwick, on "Conservation of Soil Moisture." Questions were asked and answered by Messrs. McNeill and Fletcher. Considerable attention was given to root killing, and many different opinions were expressed. "The London Markets," was the subject of an interesting paper by Mr. Freeman Fitch. His report was a brief but comprehensive one, showing the advantages and disadvantages of the fruit growers in the London market, with its wonderful amount of business. The proper insurance of shipments was discussed and many questions asked were answered by Mr. Fitch.

An address by Captain C. O. Allan, on Marine Insurance, proved valuable. Information was

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given about the shipment of apples by the steamer Loyalist, in which Nova Scotia growers had shipped 20,000 barrels of apples (the Furness, Withy line) and which were lost. The insurance on the apples was paid and the company proved equal to the best on the continent.

Many were interested in listening to Mr. R. W. Starr, who spoke on "Impressions of Ontario Fruit and Fruit Growers." The speaker when in Ontario found Ontario apples were well colored and learned that this was on account of their being left on the trees as long as possible before frost came.

A DOMINION ASSOCIATION.

References were made to packing fruit by A. McNeill, Chief of the Fruit Division at Ottawa. Regarding the formation of a Maritime Fruit Growers' Association, Mr. McNeill thought it advisable to have a Dominion Association in order to give fruit growers more influence with the government.

Spraying was discussed by Dr. Fletcher, of the Experimental Farm, Ottawa. Discussions followed, in which Mr. McNeill, Dr. Fletcher, G. H. Vroom and others participated. The concensus of opinion was that spraying done in a thorough manner either once, twice or three times during the year, to suit local conditions, brought the best results.

At one of the evening sessions, Secretary of Agriculture, Mr. B. W. Chipman, traced the development of fruit growing in Nova Scotia during the past 50 years. Last year the superintendent of agriculture sent fruit to the Crystal Palace exhibit at London which received the highest praise. The exhibit of 82 varieties, grown on one farm in King's county, was an eye opener to the English people. Nova Scotia holds first place among all apples from abroad. The speaker traced the increase in the value of apples from 1867 to the present time. The fruit growers of Nova Scotia feel greatly encouraged as a result of the convention.

Advertisers Read This.—I see very few advertisements in The Horticulturist along the line of fruit growers' seasonable wants, such as fruit baskets, fruit boxes, barrel staves, hoops and headings, and where they are made, unleached wood ashes, fence posts, and many other things fruit growers need. There is no time in the busy season for us to purchase these articles, and we would like to order them at this season in advance. I would also like to draw attention to the reports circulated during the months of July and August last by foreign dealers as to the probable large yield of apples for export and the actual results in comparison to other years.—(A. H., Grimsby, Ont.

I am very well pleased with The Canadian Horticulturist. It handles the subjects I am interested in.—(H. Rutherford, Long Island, N. Y.

The December number of The Canadian Horticulturist is by far the best number that has ever been issued.—(J. Cavers, Oakville, Ont.

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Quality of Fruit depends largely on proper pruning. To do this, you require one of our Extension Ladders. Look for our advertisement on cover of February and March issues of this Journal or send for free circulars and prices.

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Canadian Fruit at the London Fall Exhibitions

The Canadian fruit was a prominent feature of the Dominion Government exhibits at the Confectioners', Bakers' and Allied Traders', the Grocers' and Allied Traders', and the Dairy Exhibitions, all held at the Royal Agricultural Hall, Islington, N., London, England, last fall.

The fruit exhibit consisted of all the early autumn apples, Yellow Transparent, Red Astrachan, Charlottenthaler, Early Harvest, Brockville Beauty, St. Lawrence, Alexander, Wolf River, Antmann, Duchess, Wealthy, Switzer, Gravenstein, Early Joe, etc., and plums, pears, peaches and grapes, and the far famed Montreal Nutmeg melon.

Besides these natural fruits there was a large collection of fruit put up in fancy jars, in antiseptic fluids. These comprised all the small fruits, strawberries, gooseberries, currants, cherries, etc., with plums, peaches, pears, apples, grapes and tomatoes.

The manner in which this display was made was a great credit to Canada and resulted in a very large number of specific inquiries as to where these fruits could be procured, either from agents in Britain or from the exporters in Canada. The officials in charge gave all information possible, explaining the manner in which goods were packed, dwelling particularly on the advantages of the 40-pound box for extra choice apples, and explaining that all Canadian peaches, pears and grapes are grown in the open air, a fact not generally realized or appreciated in Great Britain.

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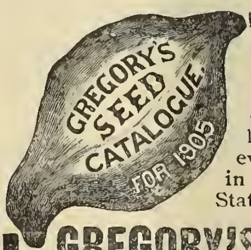

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THE OLD YEAR GONE

It seems but yesterday, so free from care,
I watched the June-enchanted fern hills wave,
Green as the billows which the deep seas bear;
Bird, leaf and brooklet greeting everywhere
The glory of the breaking summer day.

But, thou art gone! and we have but the same
Stern law of earthly life. Joys vanish fast;
Then sorrow comes, with more enduring flame,
Till o'er life's bridal robes death's pall is cast:
The heart must wait if it would taste at last
Once more the rapture of the days long dead
Life is so full of storms, and deserts vast,
The heart must bleed ere it is comforted;
The feet must falter ere they reach the door
Which shuts on grief to never open more.

But thou, I know, will come again to me,
Fair Summer, with thy laughter and thy song;
Then 'neath thy smile shall joy more perfect be,
Because for thee my heart has waited long.
Grief now may fill my heart, but hope is strong,
And it shall bloom to joy when thou dost come.
Then let the cold winds rave, my thoughts belong
To thee alone; to them my soul is dumb.
Awake, or when by sleep's sweet sense possessed,
The thought of thee to come shall be my guest.

T. H. RACE.

FRUIT GROWER'S ASSOCIATION OF P.E. ISLAND

F. G. BOVYER. JOHN ROBERTSON. A. E. DEWAR, Sec'y. R. R. DICKIE. A. J. McFADYEN.

President, REV. ALFRED E. BURKE, B.D.J.Cn.B. Vice-President, JOHN JOHNSTONE.

JOHN A. ANNEAR. E. BAYFIELD. JOHN NEWSON. F. L. HASZARD. JAS. RAMSAY.

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WOOD ASHES ARE A VALUABLE FERTILIZER

PROF. R. HARCOURT, O. A. C., GUELPH, ONT.

WHEN properly applied wood ashes are of great value for increasing both the quantity and quality of the various crops of the farm and garden. Yet, immense quantities of this valuable fertilizer are exported annually from this province. Returns from the Department of Customs, Ottawa, show that during the last calendar year $43,392 worth of ashes were exported from Ontario.

These ashes were probably bought from their original owners for not more than five cents per bushel, when, at the lowest calculation, figuring their value at the market price of the potash and phosphoric acid contained in them, they would be worth fully five or six times that. In addition to this, in the aggregate, tons and tons of ashes are allowed to go to waste through being exposed to the rains.

The three substances specially required by plants to induce a healthy and vigorous growth are: potash, phosphoric acid, and nitrogen. All three substances have their own particular part to perform in the development of the plant, and neither one can take the place of the other.

Nitrogen as a plant food appears to influence more especially the formation of stems, leaves, roots, etc., or, in other words, the growth of the framework of the plant. Potash is necessary for the formation of the woody parts of stems and the pulp of fruits, and is apparently essential to the formation of sugar and starch. The flavor and color of fruits is also credited to potash. Phosphoric acid influences more particularly the maturity of plants, and the production of seed or grain.

The natural plant food of the soil comes from many sources, but chiefly from decaying vegetable matter and the weathering of the mineral matter of the soil. Both these processes are somewhat slow, except under favorable conditions, and both supply potash and phosphoric acid, but only the former supplies nitrogen. Comparatively recently it has been learned that by the growth of certain crops the immense supply of nitrogen in the atmosphere may be drawn on to replace that taken out of the soil by plants, consequently it is only for special crops and under special conditions that nitrogen need be applied to the soil other than as farm yard manure.

In the case of potash and phosphoric acid it is somewhat different. The supply will depend on the nature of the rock from which the soil was formed and on the amount of these constituents returned in the form of manure. Clay soils usually contain large quantities of these ash constituents, the availability of which will depend largely on cultivation, drainage, etc. On the other hand, sandy and loamy soils are nearly always deficient in potash, and those naturally rich in organic matter, such as swamp soils, also contain little potash.

SOILS WHICH NEED POTASH.

These latter types of soils are those on which market garden and fruit crops are generally grown, crops which are particularly in need of potash, and, as the yield is limited by the constituent of plant food present in smallest quantity, these soils, especially for the kind of crops mentioned, are in need of potash. Further, the quality of the crop, as measured by appearance and palatibility, is affected not only by the nature of the soil, but by the crop being able to obtain from the soil a proper balance of the essential constituents of plant food and in sufficient quantities to permit of a continuous and rapid development.

Wood ashes are one of our natural sources of potash. Clean fresh burned ashes will contain 6 to 35 per cent. of potash, depending on the kind of wood from which they were obtained. They also contain one to two per cent. of phosphoric acid, and about 35 per cent. of lime. Further, the potash is all soluble in water and, therefore, immediately available to plants.

Thousands of acres of land in Ontario are deficient in potash and many of the crops of the farm, especially vegetables and fruits, are in particular need of potash. It seems too bad that wood ashes, which contain such large quantities of potash, and that in the very best form for plants, should be so extensively shipped out of the country.

If some people will continue to sell ashes, let them be advertised in Ontario so that they may be bought by those who know their value, and thus save us the humiliation of having Canada wood ashes advertised for sale throughout the Eastern States of the American Republic, and at the same time keep that at home which we need for good crop production, and which we are now beginning to bring back into the country in other forms.

BLACK KNOT ON PLUMS

PROF. F. C. SEARS, WOLFVILLE, N. S.

We have conclusively proved that black knot can be controlled, even in the midst of infected orchards, by spraying the trees, cuttting out the knots and burning them. In that part of the experimental orchard which we have had only two years, there were, at the time we leased it, about 40 old plum trees that were so thoroughly infested with knot that it seemed the wisest course to root them out and burn them.

Instead of doing so we cut them back so as to remove all the knots. In removing a knot we cut at least six inches below it so as to remove every trace of the disease. We then gathered up and burned all the trimmings. During that summer the orchard was sprayed three times with Bordeaux mixture, and in the fall the knots were again removed and burned. The trees had made a vigorous growth after their severe pruning, and there were few knots compared with the year before.

The next summer we decided to remove the knots as soon as they appeared, and with this object we went through the orchard twice, once in July and once in August, and cut out the knots. We did this regardless of the fruit on the trees, as our object was to stamp out the disease without considering how much fruit we had to sacrifice. We found that by taking the knots at this stage when they were soft it was often possible to pare off a knot instead of cutting away the entire branch on which it grew.

THE ONTARIO FRUIT EXPERIMENT STATIONS *

REPORT OF THE INSPECTOR, PROF. H. L. HUTT, O. A. C., GUELPH.

THE past year was one of the most trying that Ontario fruit growers have experienced in a long time. The extreme severity of the winter of 1903-4 caused the loss of at least one-third of the fruit trees of the province. This loss was not confined to any particular section, but was more or less general throughout Ontario. On the whole, the Niagara district suffered less than most others, the injury being confined mostly to the loss of fruit-buds. In the Essex district hundreds of acres of peach orchards were destroyed, while plums, cherries, and even apples, were more or less seriously injured.

In northern and central Ontario more than half of the plum and pear trees were winter killed, and many varieties of apples proved too tender. In eastern Ontario apples are the principal tree fruits grown, and the most of these are of the hardier varieties, but in many cases even the so-called hardy varieties were winter killed, particularly where the trees had born heavily the previous season. This fact was evident in all sections; that those trees which were over-loaded in 1903 and consequently were somewhat weakened by the heavy drain upon the vitality of the tree. suffered most severely from the severity of the winter. An excellent example of this was afforded in the orchard of Harold Jones, Maitland, where a dozen or more of his Fameuse trees most heavily loaded in 1903 died in 1904, and one tree, which bore heavily on one side only, is dead upon that side, and so far quite healthy on the other.

On account of the great loss of trees throughout the country there will necessarily be an extra lot of replanting to do next spring. For this reason I have made it a point to get from each of the experimenters a carefully prepared list of the varieties of the different kinds of fruit he would recommend for planting in his section. These lists, coming as they do from men of wide experience in fruit growing, are of particular value to intending planters.

THE SOUTHWESTERN STATION.

This station, which is in charge of Mr. W. W. Hilborn, of Leamington, is in the centre of what has been regarded as the finest peach section in Ontario. Many growers had gone so extensively into peach culture that they had 50 to 100 acres of peach trees in bearing. The first great set back came with the severe winter of 1898 and 1899, when 90 per cent. of the trees were winter killed. Mr. Hilborn at that time had 100 acres of peach trees just nicely bearing, but lost all but four or five acres. Since then he had been replanting till he had about 80 acres in trees. Last winter, however, killed out nearly every peach tree on his place, and I heard it stated that there was probably not ten acres of healthy peach orchard left in all of that district. Mr. Hilborn is not discouraged, however, but would like to plant again a small orchard of the leading varieties for experimental work.

The following is a list of the varieties of peaches, plums and cherries which Mr. Hilborn recommends for planting in his section:

PEACHES: Alexander, Yellow St. John, Brigden, Early Crawford, Fitzgerald, New Prolific, Engol Mammoth, Elberta, Crosby, Kalamazoo, Golden Drop, Banner, and Smock.

PLUMS: Burbank, Satsuma, Bradshaw, Lombard, Monarch, Imperial Gage, and Reine Claude.

CHERRIES: Napoleon Bigarreau, Mercer, Schmidt's Bigarreau, Yellow Spanish, Windsor, Montmorency, and Early Richmond.

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* This report was presented to the Board of Control of the Fruit Experiment Stations at the time of the Provincial Fruit Flower and Honey Show.

Since Mr. Hilborn has had to turn his attion to something else than peaches, he has gone largely into the growing of early vegetables, such as cabbage, cucumbers, tomatoes and melons. He says his tomatoes last year paid better than peaches ever did.

THE WENTWORTH STATION.

The fruit to which special attention is being given at this station by Mr. Murray Pettit, of Winona, the experimenter, is grapes, of which he has about 25 acres, including 146 varieties.

The vines set their usual heavy crop, but on account of the cold backward season the fruit was very late in ripening, hardly any of it being fit for display at the time of the Toronto exhibition. Many of the late varieties, in fact, did not ripen at all. The brown and black rot of the grape were much worse last year than ever before in Ontario. In many vineyards, particularly of the Roger varieties, the crop was more than half spoiled. It is important that grape growers should know that both of these forms of rot can be kept in check by thorough spraying with the Bordeaux mixture. If the disease gets a good foot-hold in this country, as it has in many of the grape growing sections of the United States, it will be impossible after a time to get a crop of grapes without thorough spraying.

The results of Mr. Pettit's variety tests are already valuable, for they show plainly that but very few of many varieties advertised are of value in this country. From among the large number tested the following are recommended as a few of the best: Black—Concord, Worden, Wilder, and Campbell's Early. Red—Lindsey, Delaware, Agawam, and Catawba. White—Niagara and Moore's Diamond.

In addition to his vineyard Mr. Pettit has about 40 acres in orchards, mostly of pears and plums. He has 28 varieties of peaches, 25 of plums, 16 of cherries, 12 of pears, and 6 of apples. Of the other fruits tested Mr. Pettit recommends the following varieties as the most profitable for his section:

PEACHES: Alexander, Greensboro, Yellow St. John, Early Crawford, Elberta, Smithson, and Smock. These are given in their order of ripening, and he would advise planting only a few of the two first mentioned.

PEARS: Gifford, Bartlett, Howell, Duchess, and Anjou.

PLUMS: Bradshaw, Lombard, Grand Duke, Burbank, Yellow Egg, Reine Claude, and Monarch.

CHERRIES: Napoleon Bigarreau, Windsor, Reine Hortense, Black Heart, Early Richmond, and Bossarabian.

THE BURLINGTON STATION.

At this station Mr. Peart, of Freeman, the experimenter, has a large general collection of fruits, made up of 69 varieties of apples, 45 of pears, 50 of plums, 10 of peaches, 8 of cherries, 28 of grapes, 27 of currants, 6 of gooseberries, 22 of blackberries, 3 of respberries, and one of quinces. Many of these he has had under test for a long time, and is thus in a position to give valuable information regarding the best varieties to plant in his section. Following is a list of the varieties he recommends of the various classes of fruits:

APPLES: Summer—Astrachan, Duchess. Fall—Ribston and Blenheim. Winter—Baldwin, Northern Spy, Greening and King.

PEARS: Wilder, Bartlett, Clapp's Favorite, Anjou, Clairgeau (dwarf), Kieffer, Winter Nelis, Easter Buerre.

EUROPEAN PLUMS: Bradshaw, Niagara, Quackenbos, Lombard, Imperial Gage, Reine Claude. JAPAN PLUMS—Willard, Abundance, Burbank, Satsuma and Wickson.

PEACHES: Champion, Crosby, Elberta, Early and Late Crawford, Smock and Tyhurst.

CHERRIES: Early Richmond, Montmorency, English Morello, May Duke, and Windsor.

GRAPES: Worden, Concord, Delaware, Lindley, Niagara, Moore's Diamond.

CURRANTS: Red—Wilder, Cherry, Pomona, New Victoria, North Star. Black—Saunders, Naples, Collins' Prolific. White—White Grape and Imperial.

RASPBERRIES: Marlboro, Miller, Cuthbert, and Louden.

GOOSEBERRIES: Industry and Downing.

Fruit trees on the whole wintered fairly well in this section, and the crop last year was about up to the average. In Mr. Peart's apple orchard the crop of Ribston was exceptionally fine. His plum orchard has suffered severely with shot-hole fungus during the past two or three seasons, and most of the trees will not survive another year. The young experimental pear orchard set out six or seven years ago is coming nicely into bearing; a number of new varieties were fruiting last year for the first time. The black rot of the grape made its appearance in this section last year as well as in the Niagara district. The crop in Mr. Peart's vineyard was more or less severely injured.

THE LAKE HURON STATION.

An excellent general collection of fruits for experimental work has been started at this station by Mr. Sherrington, the experimenter. It is made up of 75 varieties of apples, 35 of pears, 45 of plums, 25 of cherries, 20 of raspberries, 15 of blackberries, 15 of currants, and 6 of gooseberries, and a half dozen or more of strawberries. So far Mr. Sherrington has been reporting principally on apples, plums and raspberries. At the time of my visit he was in the midst of his small fruit harvest. Currants and gooseberries were an excellent crop. The raspberries had suffered from the severity of the winter and also from the drought in that section last summer. Plums and cherries had suffered from winter killing more than any other fruits, and there was no crop in the trees left. Strange to say the Japan plums had, with few exceptions, proved more hardy than the European varieties. This has been clearly shown at a number of the other stations.

THE GEORGIAN BAY STATION.

Mr. John Mitchell, of Clarksburg, the experimenter at this station, has a good general collection of apples, pears, peaches, etc., but special attention has been given to plums, of which about 170 varieties have been under test. The trees here, as in most other sections of the province, had suffered more or less from winter killing, particularly in the old orchard where they were heavily loaded in 1903. The crop last year was comparatively light. A number of the Japan plums have, for several years, been fruiting heavily, and last winter they stood well while a number of the European varieties succumbed to the severity of the weather.

The following is a list of the European varieties which Mr. Mitchell recommends as having done the best with him: Washington, Imperial Gage, Bradshaw, Quackenbos, Archduke, Diamond, Monarch, Yellow Egg, Coe's Golden Drop, and Reine Claude.

The Japan plums he finds are not nearly so saleable as those of the European class just mentioned. The following he gives as the best of the Japan varieties: Red June, Burbank, and Satsuma. Mr. Mitchell has under test 10 varieties of peaches, all the trees of which bore heavily in 1903, but last winter gave them a severe test, and where the trees were not killed outright the fruit buds were destroyed.

(To be concluded in March issue.)

I am glad to find The Horticulturist so much improved. It is the best of its kind.—(A. J. Collins, Listowel, Ont.

The Canadian Horticulturist is a welcome visitor in our house.—(W. T. Patulla, Creemore, Ont.

WILL ENCOURAGE COOPERATIVE ASSOCIATIONS

P. W. HODGETTS, SECRETARY ONTARIO FRUIT GROWERS' ASSOCIATION.

AT a special meeting of the executive and the cooperative committee of the Ontario Fruit Growers' Association held in Toronto during January it was decided to assist the fruit growers of the province to form cooperative associations. With this object special assistance will be asked for from the Ontario Department of Agriculture.

Those present were Messrs. Alex. McNeill, Chief of the Fruit Division, Ottawa; the president of the Fruit Growers' Association, W. H. Bunting, of St. Catharines; A. E. Sherrington, of Walkerton; Elmer Lick, of Oshawa; Murray Pettit, of Winona; J. S. Scharf, of Woodstock; P. J. Carey, of Toronto; A. Gifford, of Meaford; P. W. Hodgetts, of Toronto, and Messrs. G. A. Putnam and H. B. Cowan, representing the Department of Agriculture. Last year, through the efforts of the association, a number of cooperative fruit growers' associations were formed which proved the salvation of the growers who joined them. In many places where buyers were offering 25 to 50 cents per barrel for apples on the trees, or not handling the fruit at all, members of these associations netted $1 or more per barrel for their XXX apples, and were able to dispose of all of their crops at good prices. The conditions in other places where the growers had to depend on the buyers were so bad the association has decided to encourage the formation of additional associations this year throughout western Ontario.

One of the most successful cooperators in Ontario, Mr. A. E. Sherrington, of Walkerton, told of the conditions in the western and southern parts of the province, and advised that a capable man be sent next spring into the best apple sections to thoroughly organize the growers. After a lengthy discussion it was decided to endeavor to organize a limited number of associations in sections where the growers have asked for help. The assistance of the Farmers' Institutes in this educational work was promised by the superintendent, and the campaign will be opened by a couple of meetings in Forest and Thedford, January 27 and 28. Other places will be visited, and it is hoped that before the fall of 1905 15 or 20 cooperative fruit packing associations will be in good running order.

GOVERNMENT HELP.

To further assist such associations, a resolution was unanimously adopted and forwarded to the Ontario Department of Agriculture asking that the Act for the incorporation of Cooperative Cold Storage Associations be extended for five years, and so amended that co-operative fruit growers' associations can be incorporated under the act with power to acquire by lease, purchase or otherwise cold storage plants, fruit cooling houses and central fruit packing houses. The Government was further asked to extend the grant of one-fifth of the initial cost of cold storage plants to apply also to fruit cooling houses and central packing houses. A recommendation was also forwarded to the Minister of Agriculture asking that a special appropriation be made this year to cover the cost of operating several power sprayers in different parts of the province, and to provide for instruction in the proper grading and packing of fruit.

Treatment For Aphis.—The black soap from France for treating aphis I applied to a row of cherry and plum trees with satisfactory results. The foliage on the treated trees retained a bright, glossy green, and the aphis was almost destroyed. I find strong tobacco water and soap a satisfactory treatment for aphis, and not injurious like kerosene emulsion.—(Harold Jones, Maitland, Ont.

A CANADIAN INSTITUTION TO BE PROUD OF

A GREAT change has taken place in Canada and all things Canadian during the past few years. From being content to watch the tremendous strides made by our neighbors to the south Canadians have awakened to the fact that they have a country and institutions of their own of which any nation might well be proud. It has been a surprise to many to find that in the Dominion there are industries and institutions that will hold their own with any in the world.

Canada's horticultural interests are greater than is commonly realized. The descriptions published in The Horticulturist last summer and fall of some of the Dominion's leading nurseries were a revelation to many fruit and flower growers. Another horticultural institution of which Canadians may well feel proud is the Steele, Briggs Seed Co., whose head office is located in Toronto, but which has branches in all parts of the world. Some conception of the wide scope of the business conducted by this firm may be gained by a glance at the list of countries from which it secures its seeds.

Most of the seeds are grown under contract. Peas and beans are principally grown in Canada, carrots in France, parsnips in California, onions in California and Connecticut, and cauliflower in Denmark. Flower seeds come principally from Germany and bulbs from Holland.

"Our idea," said Mr. A. W. Annandale, the manager of the retail department, greenhouses and trial grounds, to an editorial representative of The Horticulturist who visited the company's establishment during January, "in having our seeds and bulbs grown under contract in distant countries is to ensure our being able to obtain plenty of seed and bulbs a high percentage of which will germinate. Take, for instance, onion seed, a great deal of which we obtain from California. While we can obtain this seed in Canada when the season is favorable there are many years when we are unable to secure it. Some years we

GROWERS IMPORTERS & EXPORTERS.
THE STEELE BRIGGS SEED CO
GRASSES SEED

A Horticultural Institution With Branches All Over the World

The second largest seed firm on the continent is that of the Steele Briggs Seed Co., of Toronto, a description of which appears in this issue. (From a photograph taken specially for The Canadian Horticulturist.

may be able to get seed, but only a small portion of it will germinate. The season in Canada is too short to enable the seed to mature properly every season.

"Were we to rely for our supply on the Canadian crop there would be many years when we would not have any seed for our customers. In California conditions are different. The season there is long and dry, and a good crop of seed is secured practically every year. California is better in this respect than Connecticut, where some of our seed comes from, as the atmosphere in Connecticut is often so moist, on account of the nearness of the ocean, that difficulty is experienced in obtaining good seed."

"Is there not," was asked, "a danger that seed secured under such different climatic conditions will not be suitable for the purpose of Canadian growers?"

"We guard against that," Mr. Annandale replied, "by carefully testing the seed before we offer it for sale. For this purpose we have established trial grounds, comprising about seven acres, in the eastern part of the city. Samples of the seed received from the different countries are taken and sown under conditions approaching as near as possible those under which the seed is finally to be sown. Where the seed is to be sown in the open we sow it in the open on our trial grounds. If the seed of bulbs are of some delicate plant or vegetable we first plant them in the greenhouses, which we have had erected specially for that purpose, and later transplant the plants to the open. This work has grown so rapidly we have had to add one greenhouse after another until now the greenhouses cover about an acre of ground. A careful record is kept of the percentage of seed from each lot which germinates. If the percentage is low we do not sell that seed."

"How," was asked, "do you manage to make your arrangements with the growers in so many different countries, and how do you make certain that they are giving proper attention to the work?"

"We have found it necessary," replied Mr. Annandale, "to send representatives to these different sections and countries, who arrange with the growers at first hand. Some of the growers in Canada and the United States are visited two and three times a year. Our business in flower seeds and bulbs is not large enough to warrant us in sending a representative to such places as Bermuda and Japan so often. These points are not visited more than once in three years."

"What guarantee have you," was next asked, "that the growers will send you good seed?" "If," replied Mr. Annandale, "we find, after testing the seed on our trial grounds, that certain growers are not sending us seed of high quality we immediately warn them, and if necessary break off our contracts with them. Some of the growers with whom we deal have been sending us seed for years and we have found them so reliable we hardly deem it necessary to even test their seed. The rule for good seed is that 85 per cent. should germinate, though in some cases, such as sweet corn, up to 100 per cent. will grow, while in some other seeds 85 is a high percentage.

"Some seeds," continued Mr. Annandale, "are very costly. A consignment of cauliflower recently received is worth $28 per pound, and a calceolaria, not a new variety, costs $40 per ounce. Some varieties are sold by the thousand seeds and are so fine that we have considerable difficulty handling them as they have to be counted under the magnifying glass."

THE BUSINESS DEPARTMENT.

The representative of The Horticulturist was much interested in certain features of the business that were pointed out to him by Mr. Annandale in connection with a visit to the wholesale premises on Front street, Toronto. Although the start of the Steele, Briggs Seed Co., 32 years ago, was a humble one, like those of the nurseries that have been described in The Horticulturist, the business has grown to such an extent that everything has to be done on a large scale. In addition to the wholesale department, and the greenhouses and trial grounds already described, it has been found necessary to establish a retail store on King street, as well as branches in Hamilton and Winnipeg. Some conception of the volume of business transacted may be gained from the fact that over 100,000 catalogues, printed in English and French, are distributed every year, describing the seeds, small fruits, fertilizers, garden tools, etc., that the firm deals in.

Lilies Growing in Bermuda

A view of one of the fields of lilies as grown in Bermuda under contract for the Steele Briggs Seed Co., of Toronto, is here shown. In Bermuda lilies are grown to perfection.

SEED MUST BE CLEAN.

A most interesting piece of apparatus at the wholesale warehouse is one used for cleaning the seed. This is accomplished by a sort of fanning machine. "We have to exercise great care," said Mr. Annandale, "to see that the seed we send out is free from all impurities. The germinating seed is the heaviest, and when we turn the blowing machine on the seed the lighter impurities are forced out.

"As most of the seeds sold through our retail branches, and the firms with whom we do business, is put up in small packages many hundreds of thousands of these paper packages are required. On this account we have found it necessary to instal machinery for the special purpose of making these bags. One machine will make 35,000 in a day. These bags are printed on ordinary printing presses on the premises and then filled and sealed by another machine at the rate of 28,000 per day. The cardboard cartons containing larger seeds, such as sugar corn, peas, beans, turnips, mangolds, etc., are filled by a machine similar to that used for tea packages.

"As the greater part of our business is done on a commission basis, assortments of our seed neatly arranged in cases for display are sent out early in the year to merchants all over Canada, and after the season is over the cases, with any unsold seeds, are returned. A staff of carpenters is employed in repairing seed cabinets and boxes which come back in a damaged condition."

,"The great bulk of your seed must be sold in Canada," said the representative of The Horticulturist. "Yes," replied Mr. Annandale, "outside the older portions of Canada we find that Manitoba and the Northwest, including the Yukon, furnish a field for almost unlimited expansion. Of the colonial markets Australia is the best we have."

In the wholesale department Mr. E. F. Crossland is manager. The other leading officers of the company, besides Mr. Annandale, are Mr. R. C. Steele, president; Mr. S. E. Briggs, vice-president, and Mr. W. D. Steele,

Although the representative of The Horticulturist found a great deal to interest him in what he saw he was informed by Mr. Annandale that a visitor to the company's trial grounds and green houses is most enjoyable from July till the end of September, when there is a profusion of bloom. With such institutions as these Canadians may well look forward hopefully to the future of the horticultural interests of the Dominion.

FRUIT GROWING IN BRITISH COLUMBIA

FRUIT growers in British Columbia had a successful season last year and are looking forward hopefully to the future. This was shown at the annual convention of the Fruit Growers' Association held at Duncans, B. C., January 5.

In his annual address the president, Mr. J. C. Metcalfe, of Port Hammond, B. C., reported that schedule prices had been obtained and well maintained throughout the season. There was a marked general improvement, not so much in areas planted, quantities and qualities of fruit grown, as in the mechanical part, viz., packing and grading, qualities of packages used, and the cultural methods employed in orchard work. The fruit growers, he considered, should congratulate themselves on the prices obtained, as compared with either eastern Canadian or United States growers.

There has been a disposition on the part of British Columbia growers in the past to cut prices as the season advances. With this in view, the association in the early part of the last year attempted to secure the cooperation of fruit growers, and thus far has been quite successful. In no case has a member of any of the local unions quoted below the schedule of prices agreed on and sent out to dealers in British Columbia, Manitoba and the Northwest Territories.

President Metcalfe strongly urged growers to cooperate more, not only that lower rates may be secured from the railroads, but that fruit may be marketed in better condition and to better advantage.

THE SECRETARY'S REPORT.

Much interesting information was contained in the report of the secretary, Mr. W. J. Brandrith, of Ladner, B. C., which was, in part, as follows:

Fruit growing in British Columbia is not a "get rich quick" proposition, but those who have paid attention to their business, neglecting no detail, however trivial, have had the pleasure of handling more money for their fruit during the past season than for several years. Although the plantings have been large the acreage of fruit bearing orchard is still insufficient to supply the rapidly increasing demand for No. 1 fruit. The large increase in the population of our cities and the immense immigration into the northwest and Manitoba assures us of a profitable market, to say nothing of the trade that might be developed with the far east. The opening of the Panama Canal will give us a chance in the markets of Great Britain and Ireland. With such an outlook for profitable markets we should use every endeavor to produce strictly No. 1 fruit and advertise it in every way. The people of the northwest are as anxious to get our fruit as we are to get their flour.

I think I may justly compliment the association on the success of the display of British Columbia fruit at the Dominion Exhibition in Winnipeg last summer, under the auspices of the Provincial Government, and also on the splendid achievement of British Columbia fruit at the Royal Horticultural Society's show in London, Eng., during October, at which the province received the first prize.

The success achieved in this competition in London should stimulate those who have the direction and supervision of the British Columbia fruit industry to still greater efforts to maintain and improve the quality of the fruit raised and to protect the crops from the inroad of insects and other pests. It is a matter of common knowledge how the orchards of Ontario and some of the Pacific Coast states have been ravaged and almost made valueless by the lack of precautions and the absence of a system of rigid inspection and supervision.

Considerable as the growth of the industry has been it is but in its infancy. Some of the districts on the island and coast section of the mainland will be put largely under fruit, while the Okanagan and some other districts of the interior are destined to become famous throughout Canada for their fruit products. Difficulties incidental to the settlement of a new country are being gradually overcome, and experience is being accumulated from day to day as to the best methods of cultivation. We venture to prophesy that it will not be many years before an annual provincial exhibition of fruit will be one of the leading and regular incidents in the history of British Columbia.

FRUIT MARKS ACT ENDORSED.

The good effects of the continued enforcement of the Dominion Fruit Marks Act are very noticeable. Still large quantities of inferior fruit are put on the market, and being marked No. 3 escape the penalties which they justly deserve. I would suggest that the association ask the department to specify what constitutes No. 2 and No. 3 apples. My own opinion is that No. 3 apples should never leave the farm.

THE MANURING OF FRUIT TREES

PROF. A. WAGNER.

THE notion is still very prevalent amongst agriculturists that it is unnecessary to manure fruit trees. This idea is principally due to the fact that many fruit trees, even without any special manuring, occasionally give good yields. Further, an impression has gained ground that a fruit tree which has borne well one year cannot give any yield the next or even the following year, because it needs rest.

Neither of these opinions is correct. The fruit tree is subject to the same natural laws, as regards nourishment, as any other plant. When the nutriments which are present to a limited extent in the soil have been used they must be restored, or in other words the soil must be manured. The reason a tree which has yielded well one year generally bears little or not at all the next year, is capable of a simple explanation; the necessary assimilated plant food is no longer available in the soil and the tree cannot again form fruit until the soil is rendered able to supply this food.

If a tree which has yielded well is correctly manured at the right time there is no reason why it should not bear fruit year by year. Plenty of examples can be given where trees thus manured have given good crops for many years in succession, any failure being attributable to some other cause, such as unfavorable weather at the time of blossoming, birds, insects, fungi, etc. There has been an improvement of late years, and there are already farmers and fruit growers who, when manuring, do not forget the fruit orchard, but there is still a great deal wanting in this respect.

In order to grow and thrive, the fruit tree requires, like every other plant, warmth, sunlight, and moisture, as well as a number of other substances, which are taken partly from the air through the medium of the leaves, and partly from the soil by means of the roots. The latter substances are called nutrients, and include carbon, hydrogen, oxygen, nitrogen, sulphur, phosphorus, potash, lime, magnesia and iron. All these substances are indispensable to the prosperity of the fruit crop, as if any one of them is wanting the tree cannot develop. If one or several of these substances are present to only a limited extent the tree cannot take up the remaining nutrients—even if these are present in excess—in quantities sufficient for its complete development. The yielding capabilities of a tree are therefore regulated by that nutrient which is least available in the soil.

SHOULD SUPPLY FOUR SUBSTANCES.

Fortunately, most of the substances named are so largely present in the soil or in the air that the grower has not to trouble himself about supplying them by means of manuring; in fact, only the following four substances need come into question: nitrogen, potash, phosphoric acid, and lime. These substances cannot be supplied to and taken up by the plants in their elementary forms, but have to be applied in combination with other substances.

Nitrate of soda, containing 15 to 16 per cent. of easily soluble and available nitrogen in the form of nitric acid, is very suitable for the manuring of fruit trees. It is more completely used up when applied to fruit trees than when used for ordinary crops, as that part of the roots of fruit trees which go deeper into the soil are able to take up any part of the nitrate of soda which the rain may wash deep into the soil, and which, in the case of ordinary crops, would be wasted, having gone beyond reach of the roots.

Superphosphate contains 12 to 20 per cent. of wated-soluble phosphoric acid. The phosphoric acid in this manure is soluble in water, its action therefore rapid; but on the other hand there is little or no subsequent benefit. On soils deficient in lime the full effect cannot be obtained from the use of superphosphate, as on these soils the soluble phosphoric acid is converted into the insoluble phosphates of iron and alumina, the phosphoric acid of which cannot be made use of by the plants, but superphosphate can be employed in cases where the phosphoric acid is required to act quickly, and where no prolonged action is expected.

Kainit, containing 12 per cent. potash, is not to be recommended for the manuring of fruit trees on ordinary and heavier soils; it should only be used on light, dry, sandy soils, and must then be applied in the autumn. Muriate of potash and sulphate of potash both contain about 50 per cent. of potash. Muriate of potash can be specially recommended for supplying the potash requirements of fruit trees on soils fairly rich in lime, whereas sulphate of potash is to be preferred for soils where the lime is present in small quantities only.

The Time to Apply the Wash

PROF W. LOCHHEAD, O. A. C., GUELPH.

Would you kindly let me know what time of the year has been shown to be the most satisfactory for the application of the lime-sulphur caustic wash. I understand, of course, that its primary purpose is to clean the bark, but is it also good as a fungicide?—(J. Robertson, Chateauguay Basin, Que.

As the result of experiments carried on for the past two years, when applications were made at different periods during the dormant season, it was pretty well proven that it is not safe to apply the lime-sulphur mixture any time before the middle of January. Trees treated in December last year were badly hurt by the application, while trees in the same row and same block treated in late winter suffered not at all. It is pretty well conceded that the best time to apply the lime-sulphur caustic mixture is in the spring while the limbs are still dormant, just before the buds unfold.

There seems to be no doubt that this mixture is also an excellent fungicide. It appears to kill many of the winter spores which would otherwise mature and spread the disease. Regarding its value as a check to the "spot" on the Fameuse, I am of the opinion that an application of this mixture will very materially check the disease. It is likely true that two or three additional sprayings with Bordeaux will be necessary to check the spot completely. A spraying given in early spring, while the trees are still dormant, will have no effect in protecting the leaves of the trees later on in the summer from infection by spores which are blown to those leaves. Subsequent sprayings with Bordeaux are, therefore, necessary.

PEDIGREED STRAWBERRY PLANTS

A GREAT deal of discussion has been taking place among strawberry growers, both in the United States and Canada, in regard to the claims of excellence that have been made by growers of pedigreed strawberry plants. The result of enquiries made by The Canadian Horticulturist indicates that Canadian growers do not believe that so-called pedigreed plants are any better than ordinary stock that has been given good treatment.

"The thoroughbred plant people have been doing an injury to honest nurserymen by their false statements," writes Mr. R. H. McDowell, of Tillsonburg. "The experiment stations should have exposed their fraud long before this. There may be something in the pedigree theory if properly worked out, but I have proved to my own satisfaction that the plants sent out as thoroughbred pedigree plants are in no way superior to the average scrub stock.

"In order to test the matter I selected the Michel's Early, as some plants of that variety will stool out and send up a number of fruit stalks, while other plants apparently strong and well matured will fail to put on any fruit. It looked quite reasonable to me that if they were propagated year after year from the productive plants a more productive strain would result. I had taken no pains to select the productive plants in my patch, and had been growing them in that manner nearly ever since their introduction. I sent for some pedigree plants of the above variety. They came promptly. I threw out a number of poor, little, sickly, immature ones that I did not consider worth planting and planted the rest beside a row containing an equal number of plants of my own scrub stock. I gave them the same care as my own stock. They made a fairly good row. Mine made too many plants as I did not thin them. The fruit on the thoroughbreds was no larger or better in quality than that which grew on my scrubs, and while I did not keep account of the exact number of baskets picked from each I should judge we picked nearly double the amount of berrise off mine that we did from the others.

"I dug plants off the above rows and set out a patch next spring. Both made a good row, but I could see no difference in them. They had become acclimated and accustomed to my mode of treatment. If there was any difference in fruiting qualities it was in favor of my scrubs. I found as many barren plants among the thoroughbred plants as among my own, and came to the conclusion that pedigree plants are a fraud."

SHOULD HAVE THE PLANTS TESTED.

"Breeders who profess to know all about good strawberry plants," suggests Mr. Charles H. Snow, of Cummings Bridge, Ont., "should send their plants to the experiment stations to have them tested beside those of well known plant growers. Improvement of plants by selection of the parentage stock is, in my opinion, correct, but the life of a plant, especially a strawberry, is too short to attach a pedigree to it."

Considerable attention has been given to this subject by Mr. M. Crawford, of Cuyahoga Falls, Ohio, who has come to the conclusion that the characteristics of a variety of the strawberry or any of our fruit bearing plants cannot be changed, increased or diminished by any system of selection, cultiation, pruning or fertilizing.

EXTRAVAGANT CLAIMS HAVE BEEN MADE.

"Some extravagant claims have been made by one or two United States strawberry growers for their so-called thoroughbred or pedigree plants," writes Prof. H. L. Hutt, of the Agricultural College, Guelph.

"These men know nothing about what pedigree means. There are men, such as Burbank, of California, and our own Mr. Groff, of Simcoe, who have bred plants through generation after generation until they have what might well be called highly bred or pedigreed plants. But such plant breeders are few."

"There are many of our Canadian strawberry growers who are growing their plants on good soil, under good cultivation, and who are careful to select healthy, vigorous plants from new plantations, who can furnish just as good plants as any of the advertisers who make such extravagant claims for their plants grown in no better way. I am glad that you are taking this matter up in The Horticulturist. I have heard of Canadian growers who have been disappointed in these so-called pedigree plants obtained from the States, when they might have got as good, if not better plants from some near-by grower or neighbor. It is well that our fruit growers are anxious to get the best that can be obtained, yet they must remember that varieties are developed or bred up by the few who can give the attention to crossing and breeding of plants, while the general grower is concerned more about the selection and growing of thrifty, vigorous plants of the varieties so established."

BLACK ROT OF GRAPES *

PROF. W. LOCHHEAD, O. A. C., GUELPH, ONT.

PERHAPS some of our Ontario grape growers are wondering if the methods which are so effective in Ohio in controlling the grape rot can be relied on in Ontario. We are not able to answer this question definitely on account of the newness of the situation and the absence of experimental work for a longer period than one season, but on account of the similarity of situation of the two grape belts, both as to soil and climate, we would be justified in answering in the affirmative. Both regions are grape regions on account of their peculiar position to one of the great lakes, both being strongly influenced by the presence of a large body of water to the north. Moreover, the experience of Mr. W. H. Bunting this past season in controlling a bad attack of black rot in his large vineyards near St. Catharines would lead us to believe that the disease could be controlled even more effectively the coming season. Mr. Bunting sprayed persistently and carefully from early spring to the middle of August and was rewarded with a good marketable crop. Like myself he believed thoroughly in early spraying, even while the vines are yet dormant, for the reason that the early spores are prevented from effecting an entrance into the tissues. In the great majority of cases this reasoning stands true, but apparently it is not true with the black rot, for the Ohio experiments carried on for three years in succession showed conclusively that the fungus can be kept out entirely and absolutely even when the first spraying is delayed until the last week in May or the first week in June and when the young shoots are nearly eighteen inches long.

It may be that the winter spores are not set free from their cases until the shoots are of considerable length and after the shoots have come out of their dormant condition.

It is very evident that besides persistent and careful spraying clean culture is a very essential factor in the control of black rot.

A study of the reproduction of the fungus shows the presence of spores which winter over in the dead leaves, diseased shoots, and mummy fruit. It is important, therefore, that as many of the diseased leaves, shoots and grapes as possible be collected and burned, or buried deep by the plow so that there is no likelihood of the spores reaching the surface to be scattered by the wind. The most fruitful source of infection is the

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* Extract from an address delivered at the annual convention of the Ontario Fruit Growers' Association.

mummy grape, which is too frequently allowed to remain on the vines as long as it wishes.

OTHER DISEASES OF THE GRAPE.

A few words regarding other diseases of the grape. First, and next in importance to the black rot, is the brown rot or downy mildew. This and the powdery mildew were quite prevalent in the Winona-Grimsby district. The downy mildew is characterized by the presence of pale spots becoming brown on the upper side of the leaves and corresponding whitish downy patches on the lower surface. The downy patches consist of microscopic branching stalks, bearing spores capable of infecting new vines. The fruit when attacked shows brown spots which rapidly enlarge. Soon the whole fruit becomes rotten.

The powdery mildew, unlike the downy mildew which feeds within the tissues of the leaves, shoots and fruit, is a surface feeder, and is first noticed on the upper surface of the leaves as a white mouldy growth. Two kinds of spores are produced, the summer spore in immense numbers, and the winter spore, borne in brown or black bodies, which are readily seen in late summer with a glass, immersed in the white growth.

The bird's eye rot is not a serious disease, but it is sometimes met with. The diseased spots are at first brown, and with a distinct margin. Later the center is whitish, and the margin is purple with a reddish inner circle.

Bordeaux mixture applied three or four times at right periods during the summer will control any of these minor diseases.

GRAPE FERTILIZERS

A. W. PEART, BURLINGTON, ONT.

IN order to fertilize grapes economically and effectively due consideration should be given to their special needs and the sort of soil where they are grown. In a general way grapes, as well as pears, consume a large quantity of potash. Clearly then potash must be either in the soil or supplied to it.

It appears to be well understood that a clay soil, or better still, a clay loam, is the natural home of the grape. Vineyards are often planted on sandy or gravelly loams with excellent results. They, however, require different methods of handling.

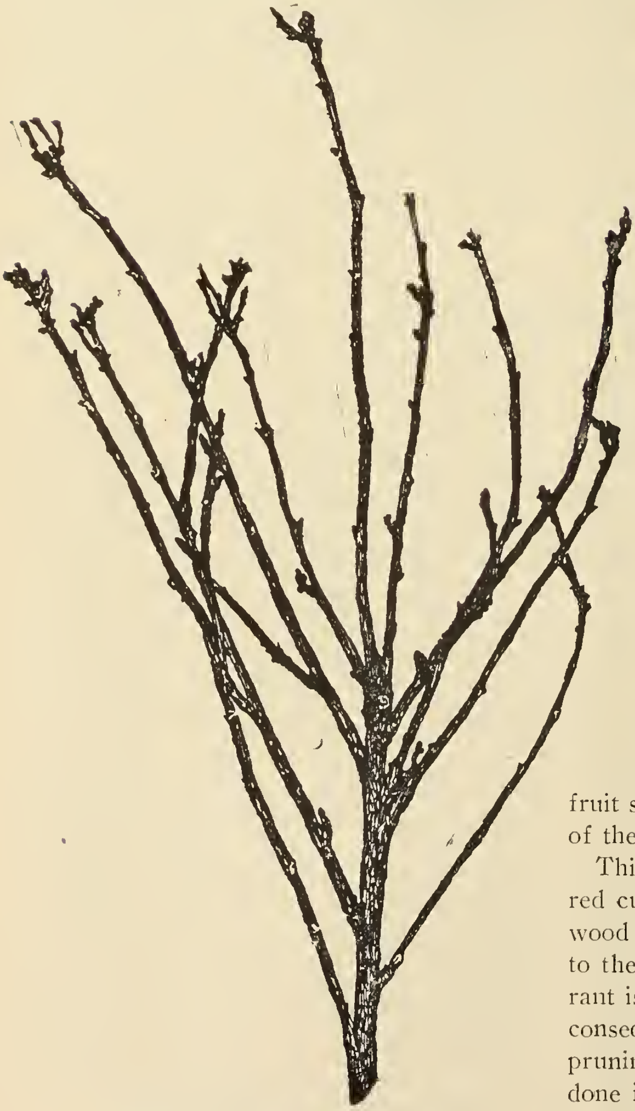
There are two plantations here, one on a clay, the other on a gravel loam. The former grows only a light to moderate amount of wood, with highly flavored fruit. I do not use potash of any kind in this vineyard, but every other year plow under a liberal application of stable manure. This supplies humus and promotes wood growth as well as size in the fruit. The other plantation does not require much wood stimulus, perhaps stable manure once in five years, but on account of the relative absence of potash in gravelly soils, muriate or sulphate of potash or wood ashes are used, preferably the latter. Unleached hardwood ashes I consider the best, scattered broadcast over the soil after plowing in the spring, at the rate of about 40 bushels per acre each season.

In the absence of enough ashes I use one of the other potash combinations, giving the preference to sulphate, sowing it evenly by hand like grain, after plowing, then harrowing it in. I think that the sulphate form may act as a check on mildew as well as a fertilizer. Either sort is used at the rate of 200 pounds per acre, each year. The above applies to bearing vines. When young I push them by careful cultivation and stable manure when necessary.

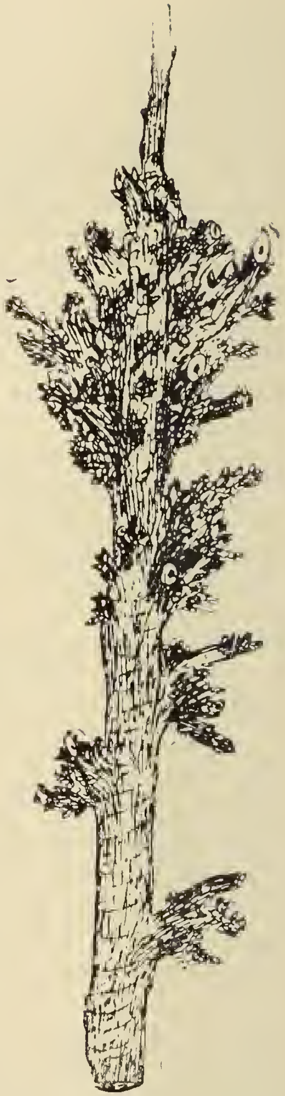
Pruning Currant Bushes

LINUS WOOLVERTON, GRIMSBY, ONT.

THE pruning of the currant is most important, because the young wood is the most fruitful, and if the growth is well cut back an abundance of fruit buds will, of course, result. The natural tendency of the growth of a young currant plant is shown by the illustration. If in the winter pruning these are cut back to two buds each fruit spurs will form along the whole length of the main stock, as illustrated.



Natural Growth of Currant Bush.



Fruit Spurs on Currant Bush.

This treatment applies to the white and red currant, on which the fruit is borne on wood of the same season's growth, but not to the black. The fruit of the black currant is produced on one year old wood, and consequently it will not do to give it spur pruning. This work should, of course, be done in the winter season. Proper attention to this work is very important.

VARIETIES OF STRAWBERRIES

STRAWBERRY growers who have not done so, will soon have to make a selection of the varieties which they will grow in 1905. Some interesting information respecting varieties tested in 1904 is contained in Bulletin 154 of the Ohio Agricultural Experiment Station, a copy of which has just reached The Horticulturist. One hundred and fifty varieties were tried with varying results. Undoubtedly there are many, even among those which failed to give satisfactory results, that upon other soils or under different conditions would prove valuable.

UNSATISFACTORY VARIETIES.

Varieties which did not produce satisfactorily were: Arizona, Arnot, Auto, Bush Cluster, Bryan, Beder Wood, Cameron, Clyde, Corsican, Darling, Double Cropper, Emperor, Empress, Early Giant, G. X. M. Nos. 1, 2 and 3, G. X. E. Nos. 3 and 4, Hunn, Lady Jane, Livingstone, Mammoth, Margaret, Marshall, Martin No. 1, Mayflower, McKinley, Michel, Monitor, Nina, Palmer's Very Early, Parker Earle, Patrick, Rapp, W., Riehl No. 3, Rough Rider, Success, Sunrise, Young's Early Sunrise, Thompson's Nos. 102, 201, 203, 500, 502, Thompson's Earliest, Twilight, Victor, Yant.

SATISFACTORY VARIETIES.

The most satisfactory early varieties were Excelsior, Fairfield, Gill and Mayflower. The latter ran very small after the first two pickings. The more prominent early varieties were Haverland, Louis Hubach, Lyon, Manokin, Senator Dunlap, Texas and Warfield.

The best mid-season varieties included Bubach, Gibson, Lloyd, Marie, Parson's Beauty, Pocomoke, Sample, Shenandoah, Sutherland and Uncle Jim.

LATE VARIETIES.

The most satisfactory late varieties were Cardinal, Commonwealth, Latest, Nettie and Robbie. Those varieties noted for their unusually good quality were Carlisle Seedling, Chellie, E. H. Ekey, Kittie Rice, Luxury, Nick Ohmer, Pennell, Senator Dunlap and Wm. Belt. The most prolific varieties were Bubach, Bismarck, Fairfield, Fisher (Prof.), Fisher (Mrs. Prof.), Gill, Glen Mary, Haverland, Highland Seedling, Howard, Kansas, Louis Hubach, Lucas, Lyon, Marie, Minute Man, New Globe, Parson's Beauty, Pocomoke, Rochester Seedling, Sample, Senator Dunlap, Shenandoah, Shepard, Sunshine, Sutherland, Thompson's No. 124, Uncle Jim and Warfield.

OTHER GOOD VARIETIES.

Varieties remarkable for large size and unusual beauty included Chellie, E. H. Ekey, Latest, Nettie, Sample and Springdale Beauty. (The latter failed to hold up in size, however.) Varieties standing prominently as leaders for market were Bubach, Cardinal, Fairfield, Gill, Haverland, Highland Seedling, Lyon, Parson's Beauty, Pocomoke, Sample, Senator Dunlap, Latest, Nettie, Robbie and Uncle Jim. A quartette of varieties excellent for home use: Carlisle Seedling, Kittie Rice, Pennell and Senator Dunlap.

I have tested a great many varieties of strawberries and my main crop consists of Crescent and Williams. The Crescent is the most profitable strawberry among upwards of 100 varieties tested. It will pay better at five or six cents a box than many of the others would do at 25 cents.—(G. C. Caston, Craighurst, Ont.

"I seldom thin my pears, or fruit of any kind, as labor is too expensive. I tried it once with some of my Bartletts and found it paid, as the fruit was larger and there was no loss through the branches breaking down from over bearing. Sometimes my branches break in this way, but not often."—(E. C. Beman, Newcastle, Ont.

Disease Among the Lilies

W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA.

For the past two or three years a blight seems to have destroyed the leaves of my lilium candidum, and the flowers have followed suit so that scarcely a head or truss opened entirely, and some of them were completely blighted. Each bud would turn brown and then a darker color in spots, open unevenly or not at all. When the foliage remained decently green the flowers opened fairly. Would Bordeaux mixture or anything similar be beneficial, and if so when should it be applied.—(J. C. Morgan, Barrie, Ont.

The disease is a very difficult one to treat, and one for which there is not any satisfactory remedy. Spraying with Bordeaux mixture in spring before there is any sign of the disease, and keeping the foliage and buds covered with it until the blossoming time, is a partial preventive, and if this is continued for several seasons the disease may be eventually eradicated. If the plants are sprayed after the disease is noticed it is too late.

Putting the bulbs in new soil is recommended, but this is not perfectly satisfactory. If the bulbs are removed it is wise to dip them in Bordeaux mixture before replanting. Success has been reported by taking up the bulbs shortly after flowering and after they have been dried off, putting them in a bag with flowers of sulphur and shaking them well so that the sulphur will get well between the scales, then plant in new soil with the sulphur still on them. The surest way of getting rid of the disease is by destroying the bulbs and obtaining new ones known to be free of the disease and then to plant them in new soil.

Big Strawberries—Great Crops of Strawberries and How to Grow Them, is the title of a book written by the R. M. Kellogg Co., of Three Rivers. Mich. It is conceded to be one of the best books ever written on growing fancy strawberries. Every detail of strawberry growing is dealt with, and those who read it will find much valuable information. It contains nothing but common sense and the results of actual experience in berry growing, and will be sent free to all of our readers who will send their address to the publishers. An offer made by the firm will be found in our advertising columns.

I find the Early Richmond, Montmorency and Fay cherries are superior to any others I have ever grown for profit.—(John D. Wigle, Kingston, Ont.

Greenhouses and Trial Grounds of the Steele Briggs Seed Co.

This illustration shows the greenhouses and trial seed grounds, at Toronto of the Steele Briggs Seed Co., whose immense establishment is described elsewhere in this issue.

FERTILIZERS IN THE GREENHOUSE

"THE only fertilizers I use in my greenhouses," said Mr. J. H. Dunlop, the well known rose grower of Toronto, to a representative of The Horticulturist, who visited his greenhouses during January, "is the best cow manure, and ground bone, with occasionally a little soot to develop the color. I have tried a great many fertilizers and find nothing to equal these.

"When I replant the roses I use fresh soil, and when it becomes exhausted I begin to use the cow liquid, applying it once a week. About the middle of February I mulch with cow manure. This is done once or twice. Good clover sod from old pasture, with an admixture of bone dust, makes an ideal soil. The bone dust must be ground fine. I have had to discontinue the use of Canadian bone dust because I cannot get the manufacturers to grind it fine enough, and all I use is imported from Chicago. If permanent beds were used a coarser bone would answer, as it would gradually be absorbed, but for soil which is frequently renewed coarse bone means waste.

"I have used a fertilizer made from carcases of animals, which contains a good deal of fatty matter. It is too strong, as it causes the leaves to fall off, and it parts with its ammonia too freely. Three days or so after being applied the ammonia begins to pass off, and for six or eight days continues to do so, hurting the foliage. In the spring, when the greenhouses are more fully ventilated, this objection would not be so great. The escape of ammonia can be checked to some extent by a covering of soil. The H brand when used should be applied light and often. A 200 pound bag will cover about 3,500 square feet. I have also tried a fertilizer made in Peterboro, but cannot see any results.

Soot is applied in liquid form. The soot is put in a coarse bag and placed in water in a barrel or other receptacle. Lime, air slacked and sprinkled on the soil or used in the form of lime water is helpful. It tends to sweeten the soil.

"I may have to resort to the use of artificial fertilizers more and more in the future, as it is becoming increasingly difficult to procure cow manure. A Toronto city by-law compels the removal of cow byres beyond the city limits, and I cannot procure it from the country, as it pays the farmer better to use it on his own land. I have to pay double the price for it I had to two years ago.

"Great care and caution must be exercised in the use of fertilizers in the greenhouse. Each grower must experiment with his own soil and study results. Tests should be made on a small scale so that in case of failure the loss would be small. The aim in rose culture should be strong growth, stiff stem, deep green foliage and large and well colored flowers."

Roses and carnations are Mr. Dunlop's specialties. He also grows a good many violets and some asparagus plumosus, smilax, chrysanthemums, lilies, lilacs, azaleas, rhododendrons, mignonette, etc. He has about three and a half acres under glass, half of which is devoted to roses, one-sixth to carnations, one-sixth to violets, and the remainder to sundries and to propagating houses. A visit to his greenhouses is a most interesting experience.

I notice that a row of apple trees planted in my orchard next to a row of walnut trees have not grown so well as the others, and some of them have died. It seems to me it does not do to plant apple trees too near walnut trees.—(A. Shaw, Walkerton, Ont.

Until my cherry trees are three years old I cut back all vigorous center growth. This extends the trees outward rather than upward. I give them as much of an umbrella shape as possible.—(John D. Wigle, Kingston, Ont.

THE RED OAK AS A SHADE TREE

W. T. MACOUN, WITH ILLUSTRATION BY FRANK T. SHUTT.

IN the United States the oak is growing in popularity as a shade tree for street planting, and more trees are being planted every year. The popular species is the Pin Oak (Quercus palustris), which is of good form, and has attractive foliage which colors highly in the autumn.

This species is a native of the province of Ontario, but only grows in the natural condition in the southwestern peninsula. At Ottawa it has not proven satisfactory, as it is not very hardy and is a slow grower. There is a native species, however, which is doing remarkably well at Ottawa, namely, the Red Oak (Quercus rubra). This is a very hardy oak with a wide range in Canada, as it is found growing wild from the Maritime provinces to the height of land west of Lake Superior. It is a rapid grower compared with other oaks and compares very favorably in rate of growth with the hard maple.

The tree, though not particularly graceful, is of good form and has a particularly clean look about it. The leaves are large and prominently dentated, of a deep green and quite glossy. In the autumn they usually assume the rich tints for which the oaks are noted, and will remain on the trees until near winter and long after the leaves from other trees have fallen. The Red Oak is rarely, if ever, affected by insects or disease at Ottawa, and the absence of these, together with the other good points already mentioned, makes this tree particularly desirable for street planting, but, as it becomes very wide spreading with age, if planted for this purpose it should only be used on wide streets and avenues.

It has never, to my knowledge, been used for street planting to any extent either in Canada or the United States, but why it should not be is what we have yet to learn. The tree in the photo, which was taken at the Central Experimental Farm, was planted in its present position nine years ago when it was about ten years old and about the size required for street planting. It is now 20 feet 8 inches in height, with a spread of 14 feet. Another tree of the same age, growing in almost pure sand, which was transplanted when it was two years old, and has been in the same place since, at 19 years of age is 30 feet 6 inches in height with a spread of 24 feet.

A 10 Year Old Red Oak Tree

No man with a spark of manhood in his composition cares to see his neighbor's home surroundings more tidy and beautiful than his own, nor to admit to the public that he is lacking in those evidences of culture and refinement of which these things are the outward expression.—(P. G. Keyes, Ottawa, Ont.

This is the fourth year I have advertised in The Canadian Horticulturist, my advertisement occupying a half column in each issue. I find it a paying investment and consider it one of the best means I have of making sales.—(William Fleming, Nurseryman and Florist, Owen Sound, Ont.

HOUSE PLANTS IN THE WINTER *

MISS PEEL AND MISS M'KEE, FORDWICH, ONT.

WE must first have a love for flowers if we are to be successful in their cultivation. A plant should not be watered every day whether it needs it or not. More plants probably die from over-watering than from any other cause. Stir the soil with your finger, and if it is dark colored and adheres to your finger the plant does not need water, but if it is dusty and light colored it needs watering. If the soil around a good, vigorous plant, growing in a warm room, shows signs of dryness it should be saturated to the bottom when it is watered. A poor plant with little foliage should not be watered often. It is better to wait until it is quite dry.

Plants breathe through their leaves and consequently require fresh air every day. If the leaves of the plant get covered with dust its breathing pores are stopped and the plant cannot live long. They should, therefore, be frequently sprinkled, or the large leaves wiped off with a wet sponge. This should be done every week at least. It will also prevent the eggs of insects, which may be on the plants, from hatching.

FROZEN PLANTS.

It sometimes happens that through some mischance the plants in the windows become frozen. In such a case the best thing to do is to remove the plants, as soon as possible, into a cool, dark room, a little above the freezing point, and sprinkle them with water, then bring them gradually to the heat. Sudden heat will completely destroy the plants. Plants that have been frozen can often be saved in this manner. A good plan to guard against frost is to cover the plants at night with newspapers.

STUDY YOUR PLANTS.

Amateur florists should study the habits of the plants in their collections in order to give the special care needed by each variety. Not only does this apply pertinently to watering but to the position in the window. If you have a southern window for plants this will suit geraniums, heliotropes, roses and plants of that class, but begonias, primroses and many other plants adapted to house culture are not particularly fond of strong sunshine, in fact are often injured by full exposure to it. Find out what plants like partial shade and give them positions in the rear of the sun-loving plants. In this way the plants that require sunshine will not be robbed of it, and those which do not require sunshine will not be harmed by having an excess.

When arranging plants in the window garden aim always to have the view from the room pleasing. They are for home adornment and they should be most attractive from the home standpoint. A good general rule to follow for effectiveness in arrangement is to have the taller ones at the sides. This frames in the window and allows the sun to get at the centre of the group. If all the plants are sun-loving ones place the low growing ones next the glass with the taller ones behind. Do not crowd any of them.

The use of swinging iron brackets at each side of the window is highly advisable from the standpoint of utility as well as looks. Those holding three pots enable one to arrange small plants of a drooping nature, so that the effect is very fine. These brackets can be swung to or from the glass and are in every way preferable to shelves.

There is really no time nor occasion when flowers are out of place. In the home they serve a two-fold purpose, beautifying by their presence, and refining by their quiet influence.—(A. R. Goodman, Cayuga, Ont.

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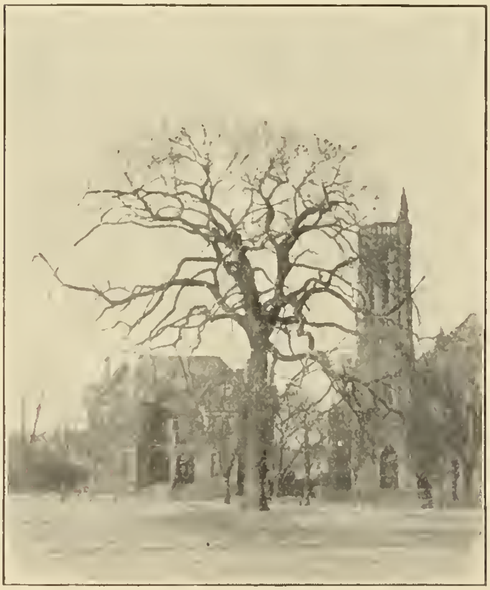
* A paper read at a Woman's Institute meeting.

FLOWER AND PLANT LORE

EDWARD TYRRELL, TORONTO, ONT.

I WILL leave my history and lore of flowers and plants for a while, as our garden beauties are taking their rest, and write some of my gleanings about trees. The early Christian teachers of European nations taught that tree planting was an act of piety to God and a duty for the future.

A proverb of northwest India declares that three things make a man truly a man—to have a son born to him, to dig a well, to plant a tree. The planting of a tree is a trifling expense, there it grows and costs nothing but time. "Every tree is a feather in the earth's cap; it is a comfort, an ornament, a refreshing to the people. It is a virtue to set out trees and beautify God's earth."



A Toronto Elm Tree

The asking of a distinguished guest to plant a tree is a pleasant way of commemorating his visit; this has been done in the Allan Gardens here by members of our royal family. According to the German fancy no tree planted as a memorial will grow and flourish unless it has a motto given at the time of planting. When the late Baron Bunsen was visiting Lepsius, at Berlin, in 1857, the antiquary requested him to plant a young oak in his grounds. I held the trees, writes Bunsen, while the earth was thrown over its roots, and I said in giving the name:

Oak, I plant thee, grow in beauty ; straight and
firm and vigorous stand,
Bunsen is the name I give thee, flourish in the
German land;
For the house of Lepsius blooming, through the
storm grow fair and free,
And a shelter in the noonday to his children's
children be.

It is of trees already grown and come to their maturity that I am interested. "And what a glorious object is a tree, how magnificent on the boundless plain or mighty hillside." But the solitary tree there is scarcely its match for beauty among such objects in the face of the earth. Well might Mrs. Hemans write:

The stately homes of England,
How beautiful they stand,
Amidst the tall ancestral trees,
O'er all the pleasant land !

The elm, the patriarch of the family of shade trees, the majestic, the umbrageous elm. If we notice the frequent occurrence of the elm in situations where without it the landscape would be a blank, but with it exceedingly picturesque, the graceful outlines of its festoons of foliage painted on an evening sky, we cannot but allow that it ranks very high. Few I think of its brethren excel it in grandeur and beauty.

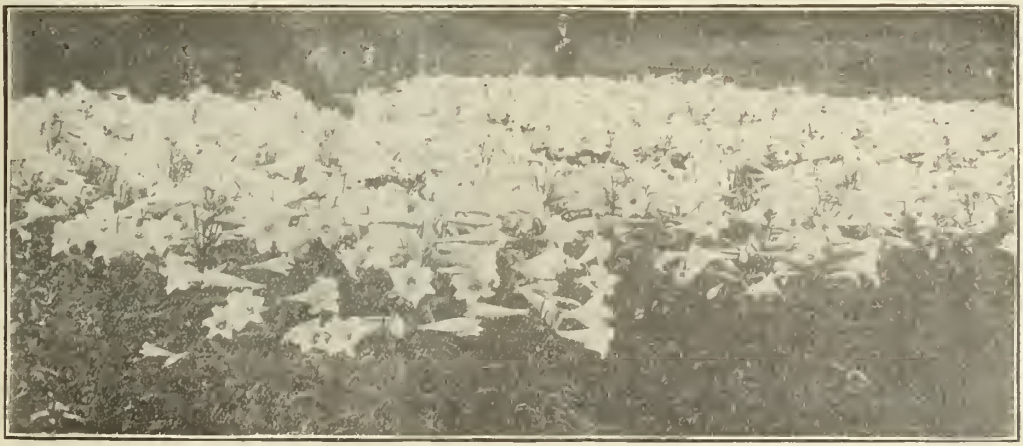
There are many handsome elms in this city, but the elm in the Normal school grounds (west side), a cut of which appears herewith, stands out very prominently. Although now, in winter, it shows many abrupt, twisted and irregular limbs, it is a glorious object in the spring and summer, its full top bending over toward the ground on every side (150 feet from side to side) with the dignity of the forest tree, and all the grace of the weeping willow, the architecture and handiwork of God, of which the eye never tires, and one leaves it refreshed and delighted.

Individual trees planted by famous men and women are often to be seen by those who visit the old land. About a century ago there was quite a fashion for planting willows. It is recorded the first weeping willow (Salix Babylonica) was introduced into England in a rather novel way by Alexander Pope, the well known poet, who resided at Twickenham, who received a basket of figs from Turkey. He was told that the basket was made from the branches of willows, the very same species under which the captive Jews sat when they wept by the waters of Babylon. Being associated with so much that was interesting he untwisted the basket and planted some of the branches. Happily the willow is very quick to take root and grow, which they did, and one soon became a tree and drooped gracefully over the river in the same manner that its race had done over the waters of Babylon. It is said that from this source all the weeping willows are descended.

CHRYSANTHEMUNS IN THE GARDEN

G. H. MILLS, TORONTO, ONT.

Do not try to grow chrysanthemums on a piece of heavy clay ground. They require a nice, medium loam. If you have such soil on the south side of a fence, without trees or buildings shading it, you are fortunate. Cover the ground with three inches of old manure and one pound of bone meal to a yard. Early in May dig and break up the soil until it is fine, and if the weather is suitable the planting can be done. The plants should be rooted early, say in March, and kept growing in pots until planting time. If you want to grow them to a single flower you can plant them six inches apart in the rows and eight inches between the rows, but you can get nearly as good flowers by taking the top off the plants, as they will break and produce three or four shoots. The time to do this topping is when they are growing nicely outside. When hot weather sets in the plants will require lots of water. A mulch of one inch of old manure will prevent the surface of the ground drying and will hold the



Lilies as Grown in the Great Little Island of Japan.

Now that most people are thinking of Japan as a warlike country it is a pleasure to find that many of our best lilies come from Japan. This shows a bed of lilies as grown in Japan under contract for the Steele Briggs Seed Co., of Toronto, as described elsewhere in this issue.

moisture at the roots. The plants will not thrive if allowed to dry out once or twice, but, on the other hand, it does not do to over-water them. Sprinkling the plants with the hose once a week will keep them clean. If the aphis gets on them take tobacco stems and soak them and syringe with the liquor. Should the chrysanthemum fly appear catch and kill him or he will soon spoil your plants. He is like the fly that spoils the asters, and two or three of them are able to quickly ruin 100 plants.

When the buds appear take all off but the top one, and if you feed with a weak liquid manure once or twice a week it will improve the flowers. If you can change the liquid by using say cow, horse and sheep manure, one after the other, so much the better, but stop all feeding as soon as you see the buds showing color.

Try Madam Bergman the first year, and if you succeed you can try others the following year. You will by then have found out many little things not mentioned here. When the weather sets in cold, say six degrees of frost, secure some dry leaves and cover six inches deep and lay on some brush to keep them in place. In the spring uncover them and they will grow again from the stools around the plants; nice young plants will have rooted. Dig up the lot and take out the young plants. Prepare your ground as before, but this time put in the young plants from your own stock.

MILDEW ON LETTUCE

VEGETABLE growers in the vicinity of Toronto, who are forcing vegetables for the winter markets, have been having considerable difficulty with mildew. One of the greatest sufferers has been Mr. J. W. Johnson, whose greenhouses were visited during January by an editorial representative of The Horticulturist. The mildew causes the leaves of such vegetables as lettuce to wilt and gradually kills the plants.

"By many the cause of the trouble is thought to be in the soil," remarked Mr. Johnson, "but I have proved that this is not the case. I resorted to sterilizing the soil, and at first it appeared as if this was an effectual remedy, but it turned out at a later stage not to be. I am now convinced that it is something in the house, as I have been growing lettuce for years and never had any mildew till I built my present greenhouse. You see I have two greenhouses side by side, in which conditions as to soil, etc., are precisely alike. Mildew has appeared in one and not in the other. One has brick walls, the other wood. The former is damper, and to this the mildew is probably due. I put in underdrains and opened ventilating holes in the walls without producing any effect.

One of Mr. J. W. Johnson's Greenhouses.

"Ventilation has probably something to do with the matter. It is a curious fact that in one greenhouse, where the ventilators open on hinges at the bottom, mildew appears, while in the other, where they open on hinges at the ridge, it has not appeared. Head lettuce appears to be more subject to mildew than bunch lettuce.

THE ONLY REMEDY.

"I have found sulphur treatment to be the only effectual remedy. I mix the sulphur to the consistency of cream and put it on the hot water pipes with a brush. If necessary to apply the treatment before artificial heat is required, a fire has to be lighted to heat the pipes, but the first crop, sown in August, when the air is drier, is not so subject to mildew as those which come on later. Watercress grown in the same greenhouse is sometimes affected with mildew, though it seems to have disappeared this year. The sulphur treatment has also proved efficacious in the case of chrysanthemums.

Vegetable Growing in the Winter

"Another enemy we have to contend with is the green fly. I find 'Nikoteen Aphis Punk' an effectual remedy. I hang it on wires while burning, and the fumes kill the fly. Formerly I used tobacco stems, but they burned the plants. The punk, which comes in rolls, is more expensive, but it is worth the difference.

"In growing lettuce some prefer to sow thick, and thin out, allowing the plants to mature where sowed. I prefer to transplant and get single heads. For bunch lettuce I set four or five inches apart, for head lettuce eight by ten. The temperature should be kept at 70 degrees by day and 50 degrees by night. Bunch lettuce should yield a crop every month; head lettuce every two months. I keep on sowing seed every two or three weeks, thus ensuring a succession of plants. Bad seed this year has interfered with the success of the crop.

"I am looking forward to the cucumber crop, for which I sowed the seed January 16. My cucumbers are ready about the middle of May and keep coming on till July, when the outdoor crop comes in. I also sowed my tomato seed January 16."

"**A Practical Vegetable Growers' Association** would be a good thing," remarked J. W. Johnson, of Toronto East, to The Canadian Horticulturist recently, "provided the members would live up to their agreement. The discussions at their meetings would be valuable, but such an association would be of little use in fixing prices. The farmers about Toronto have taken to raising a great deal of garden truck, which comes into competition with what the market gardeners produce, and as this is a side line with the farmer they are willing to take less than the gardeners could afford to sell for. Under such circumstances it would be unfair to bind the market gardeners in the matter of prices."

Have been a subscriber to The Horticulturist for 10 to 15 years. I appreciate the great improvements that have been made in that time. It has become a necessity in the house. I should miss it very much.—(W. H. Parker, Humber Bay, Ont.

THE MANURING OF MARKET GARDEN CROPS

GEO. CAMPBELL ARNOTT, MEMB. AM. CHEM. SOC., MEMB. ROY. AG. SOC. OF ENGLAND, ETC.

WHILST there is no excuse for the farmer not knowing how to manure his acres most profitably, the market gardener is entitled to more indulgence. The farmer is in the happy position of having placed at his disposal a vast amount of information gathered from carefully conducted experiments of practical men extending over many years both in Europe and on this continent, whereas very little attention has been bestowed upon a rational system of manuring in horticulture and garden crops.

Seeing that the same quantity of plant food, nitrogen, phosphoric acid, and potash required, for example, to produce a given quantity of mangels, grass, sugar beet, and other farm produce, can furnish a similar quantity of cauliflowers, green peas, salad, and similar garden produce, it requires no intricate calculations to see which is the most profitable investment.

The yield in garden vegetables being so much greater, the farmer having to be content with one crop per year, whereas the market gardener endeavors to obtain two or three crops in the same period, it follows that two or three times as much plant food is required per acre as is the case in ordinary field cultivation.

Success in the growing of vegetables depends particularly on the time when marketed, the quality of the product, and the yield per acre. It is a matter of experience that the earlier the vegetables are marketed the higher the price which will be secured, and that the early gathering of one crop permits the growing of another on the same soil the same season. The importance of being first in the market is appreciated by gardeners, and their constant aim is to be first in order to secure top prices. To do this and to be on the safe side the market gardener cannot afford to experiment and run the risk of failure. The increased profit secured by the gain of a week is so large that if there is any way of securing it that method must be utilized to its fullest extent.

HEAVY MANURING A NECESSITY.

The product of the market garden being mostly consumed in the larger cities the gardens are usually situated within a reasonable distance of them, and consequently able to obtain large quantities of stable and barnyard manure fairly cheaply. This, no doubt, explains the reason why heavy manuring has come to be considered a necessity for the successful growing of vegetables.

In the few text books which have been written the authors do not seem to have grasped the subject of manuring thoroughly, for they hardly go beyond naming as artificial or chemical manures such substances as bones, tankage, composts, horn shavings, wool and other refuse matters which are all very slow in their action, and even then all the plant food does not become available.

Slow acting manures are very well for the farmer who is not up to date and whose one crop is drawing its nourishment from the soil for six months and in some cases even longer, but the market gardener needs to get two or three crops off in the same time and cannot afford to depend on these slow acting, incomplete and dilute manures. The use of quickly available, that is, soluble, complete chemical manures has been conclusively proved to be the best and cheapest means of forcing garden crops on a large scale.

INTERESTING EXPERIMENTS.

The most valuable contribution, to our knowledge, on this subject is to be found in the data obtained by that celebrated agricultural chemist, Dr. B. Dyer, at his experiment farm in Kent, England, on market garden crops extending over nine years.

His figures thoroughly endorse those of other observers. To take one vegetable out of the many as an example, viz., cauliflowers. These were manured:

1. With an ordinary dressing of 14 tons barnyard manure per acre.

2. With double the quantity, viz., 28 tons barnyard manure per acre.

3. With 14 tons barnyard manure, supplemented by quick-acting complete chemical manure.

The results were as follows:

No.	Cost of Manure per Acre.	Average Yearly Weight of Crop per Acre.	Average Weight per Head in Pounds.
1.. .	$24 00	14 tons 1680 lbs.	3.16
2.. .	48 00	18 tons 76 lbs.	3.87
3.. ..	39 00	21 tons 784 lbs.	4.52

This was a gain over the ordinary manuring with barnyard manure of nearly seven tons per acre and more than 40 per cent. in the individual weight per head by the addition of quick-acting complete chemical manure costing only $15 per acre; or a gain of more than three tons in the crop per acre and 17 per cent. in the individual weight of heads at a saving of $9 per acre in cost of manure when double the quantity of barnyard manure was used.

In addition to this monetary gain the experimenters make the following statement: “That speaking generally the crops grown with the addition of chemical manure were uniformly of decidedly better quality than those grown with manure alone. That in the case of asparagus, cabbage, cauliflowers, etc., they far surpassed them in succulence, flavor, and tenderness, being uniformly far less fibrous.” This improvement in flavor and lusciousness has also been many times observed in the case of tomatoes, rhubarb, and most fruits.

In regard to the question of chemical manures inducing earlier crops, the same authority says: “This was particularly noticeable in regard to strawberries during one of the heaviest crops in recent years. The plot dressed with 14 tons barnyard manure produced 9,408 pounds, and when supplemented with chemical manure the total crop was only increased by 336 pounds. But in the first few days of picking nearly 700 pounds more fruit per acre were gathered from the latter plot, and during this time the market value of the fruit per pound was at least double that of fruit picked during the succeeding days.

It will thus be seen that the addition of a properly manufactured quick-acting chemical fertilizer to the barnyard manure is possessed of three distinct advantages: First, in the production of an earlier crop; second, in a vastly superior flavored crop; third, in a much larger crop obtained at considerably less cost.

It is to be hoped that some of our more advanced market gardeners will make trial of new methods, and from their new experience will most certainly learn to limit their expenditure in purchased barnyard manure and increase that in complete, quick-acting chemical manures as by far the most profitable.

FORCING LETTUCE

“TO grow lettuce successfully,” says Mr. J. MacNamara, of Bracondale, Ont., “the seed should be started in the hot bed before February 15. When this is done the plants are ready for setting out by April 10. They should be put out as early as the season will permit. I put them in rows two feet apart and about five inches apart in the row.

“If the season is at all favorable the crop is ready for market by June, but last season it was somewhat later. The best variety for outside growing is Nonpareil, which forms a good head and finds ready market.”

FORCING TOMATOES

MARKET gardeners have been giving a good deal of attention in recent years to growing vegetables under glass. Canadian growers of tomatoes will find much to interest them in Bulletin No. 153 of the Ohio Agricultural Experiment Station, which has reached The Canadian Horticulturist. The results will be found in the following summary:

Greenhouse tomatoes, because of superior quality, sell more readily at much higher prices than the southern grown product on the same market.

Tomatoes grown in the spring have been much more profitable than either lettuce or cucumbers grown at the same season.

The average yield has been over two pounds per square foot and the average price 12 cents per pound. Thus the returns have been more than 20 cents per square foot of bench space.

Raised benches have the advantage over ground beds in earlier ripening of fruit.

Sub-irrigation or mulching is essential to success in tomato forcing and it is advantageous to combine both methods.

Ordinarily the tomato plants were set two feet apart each way and trained to two stems, but recent tests seem to indicate that plants set one foot apart each way and trained to one stem will give a higher yield and ripen earlier.

For a spring and early summer crop the seed should be sown in flats about the first of December. The plants may be pricked off into pots or flats, flats being more economical. The second and third shifts should be made into pots.

Under ordinary care plants from seed sown December 1 will be ready to set in the permanent beds about the middle of March, and the fruit will begin to ripen from the first to the middle of June.

Stiff wire, with a hook at the upper end and made into the form of a cork-screw at the lower end, screwed into the soil near the plant, is a very satisfactory device to which to attach the lower end of the twine that serves as a support to the vines.

Strong twine running from the hook in the cork-screw wire to a wire stretched directly over the row of plants and fastened to the rafters, is a more satisfactory support than stakes.

In training plants to one stem all side branches should be kept pinched off. When training to two stems the lowest strong branch, which is usually the one just below the first fruit cluster, should be left for the secondary stem. All other branches or suckers should be kept pinched off.

Hand pollination is a necessary operation in the successful forcing of tomatoes. A wooden ladle and a spatula, with handles about 18 inches in length, are very convenient and helpful in doing this work. A dry atmosphere facilitates pollination.

The temperature of the house should be about 60 degrees Fahr. at night and the day temperature can be allowed to run up to 80 degrees with artificial heat and to 100 degrees or more with sun heat. No whitewash is needed on the glass.

The white fly, or plant house aleyrodes, is a troublesome insect to combat in tomato forcing. It can be controlled by fumigation with hydrocyanic acid gas.

Great care should always be exercised in fumigating with this gas as it is very poisonous and damage to plant and animal life may result from the careless use of it.

The leaf blight of the tomato *(Cladisporium fulvum)* Cooke, is very injurious if permitted to gain a foothold early in the growth of the plants. When present in a mild form toward the close of the fruiting period of the tomato, the damage resulting is in part offset by the earlier ripening of the crop. The Bordeaux mixture has proven beneficial as a preventive of the trouble.

The dry or tip rot of the tomato becomes very destructive when allowed to have its way. This trouble seldom occurs to a harmful extent when there is an abundance of moisture in the soil.

Baskets holding five pounds are a very satisfactory size in which to market the fruit. When shipped they are packed in crates holding four baskets each.

Tomatoes when forced under glass are more inclined to grow irregular than when grown in the field; hence in selecting varieties for forcing it is important that they be such as naturally grow smooth.

The Beauty and Stone are very satisfactory varieties for forcing. The Beauty is of better appearance than the Stone, but the stone is more prolific and because of greater firmness is better for long distance shipments. The Magnus, because of open foliage, is a good variety to force in ground beds.

Frogmore's Selected Forcing, Earliest of All and Combination are promising sorts but need further trial to prove their true value.

Fertilizers Benefit the Crops

EARL SPENCER, PICTON, ONT.

I AM a full believer in the use of fertilizers, having used them for over 20 years. The first year I applied one ton on yellow field corn. The result was a first-class crop. I receive increased orders every year and never have quite enough. We miss results in some crops every year. I think the seasons have something to do with it, or we do not understand the conditions of every part of our soil, but eight times out of ten we have the largest yields where we use fertilizers. My experience is that vegetables are more tender and sweeter, potatoes are larger and smoother and will not rot as quickly, and that berries are larger and will stand a drought better when fertilizers are used. The canning industry has reached the point where nothing but large yields will pay the growers. This means our soil must be full of plant food. A high grade fertilizer will forward a crop from start to finish, to say nothing about the foul seed that is introduced when ordinary manure is used.

Growing Early Cauliflowers

"TO secure cauliflowers for the early market I start the seed in hot beds about February 15," said Mr. J. MacNamara, of Bracondale, Ont., to The Horticulturist recently. "As soon as weather conditions permit I select a cloudy day and transplant the young cauliflowers and cultivate frequently until they begin to head.

"When the head begins to form I turn the inner leaves over it to form a perfect shade so that the sun will not burn it. If a cauliflower receives a check it is likely to throw a small head and is of no more use, as it will never reach a saleable size. The best varieties are Gilt Edge and Snowball.

"For the early onion market I grow a Spanish variety. I start the seed in hot beds about February 15 and then transplant to rows 30 inches apart and three inches apart in the row, about the last of April or as early as possible. With plenty of cultivation these should be ready for market by July. For onions a sandy loam is better than dark loam, but a good crop can be grown on either."

In weeding out undesirable varieties of blackberries, the following were found too tender for this district, Early Cluster, Early Harvest, Minnewaski and Ancient Briton. —(A. W. Peart, Burlington, Ont.

I neglected to bank around my young trees in the fall a year ago, but when snow came it was tramped around the trees, thus preventing the mice from injuring them.—(A. E. Mather, York Co., Ont.

The Canadian Horticulturist

The Only Horticultural Magazine in the Dominion.

OFFICIAL ORGAN

ONTARIO FRUIT GROWERS' ASSOCIATION.

THE POMOLOGICAL AND FRUIT GROWING SOCIETY OF THE PROVINCE OF QUEBEC.

PRINCE EDWARD ISLAND FRUIT GROWERS' ASSOCIATION.

H. Bronson Cowan, Editor and Business Manager.

W. G. Rook, Advertising Manager.

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8. **All Communications** should be addressed:

THE CANADIAN HORTICULTURIST,
TORONTO, CANADA

A DOMINION CONFERENCE REQUIRED.

Fruit growers should press the proposal to hold a Dominion conference. This matter has been discussed and approved of by several of the provincial fruit growers' associations and the assistance of the Hon. Sydney Fisher, Minister of Agriculture, has been promised. The first move must come from the Dominion Department and a gentle reminder, at this time, from the fruit growers may, therefore, be in order.

Such a conference is greatly needed. There are many matters pressing for a solution which the fruit growers are unable to settle satisfactorily through their provincial associations. Several of the provinces are using different sized boxes, barrels and baskets for the shipment of fruit and considerable confusion is sometimes caused thereby. Certain sizes should be agreed on by the different provinces and adopted as the standard Canadian packages. Present conditions are little better than chaotic.

The marketing of fruit is a question which requires a great deal of careful consideration. An effort might well be made to see if anything can be done to ensure growers receiving proper returns from commission dealers not only on this side of the Atlantic but on the other side as well. While the great majority of commission men are perfectly honest experience has shown that some are dishonest, and protection against such is what fruit growers desire. Many important phases of the transportation question could be dealt with more satisfactorily through a Dominion organization than provincially. Some provisions of the Fruit Marks Act and possible additions to it might well be dealt with.

Through the Dominion Department of Agriculture the leading dairy authorities in the different provinces have been enabled to hold two valuable conferences at Ottawa. A year ago the live stock men held a similar gathering. The fruit men should now press their case. No better time or place for such a meeting could be selected than the next provincial Fruit, Flower and Honey Show in Toronto.

CO-OPERATIVE ASSOCIATIONS.

The Ontario Fruit Growers' Association acted wisely last month when it decided to make an active effort to form more local fruit growers cooperative associations. More good will accrue to fruit growers through these local associations than in any other way. This is the best form of cooperation.

After growers have learned how to work together through their local associations the foundation will have been completed for a strong provincial organization. A provincial organization composed of scores of local cooperative associations would be in a position to settle many of the difficulties growers have to contend with in the marketing of their fruit. Without the local organizations to start with it will be a difficult matter to form a strong provincial association. Many of our growers have yet to learn the first simple principles of cooperation.

VALUE OF FERTILIZERS.

Evidence of the great advances that are being made in the methods of growing fruit, flowers and vegetables may be found in the increased attention that is being given to the use of commercial fertilizers. A few years ago the man who purchased fertilizers was considered, by many, to lack in brains. To-day it is recognized that the judicious use of fertilizers, on most soils, is a profitable investment.

The reason there has not been a more rapid increase in the use of commercial fertilizers is due to the many mistakes that have been made by growers. Many growers, when they have heard the use of a certain fertilizer has proved profitable to some of their neighbors, have purchased the same fertilizer and used it in the same manner as their neighbor without stopping to consider the special requirements of their soil. These men, when not satisfied with results, have loudly proclaimed commercial fertilizers to be a fraud when the trouble has really been due to their own ignorance.

The most successful growers are those who study the needs of their soil and of the crops they are raising and who purchase the fertilizers best adapted to their needs. Some prefer to mix their own fertilizers. These men almost invariably make their investments in fertilizers net them excellent returns. An encouraging change for the better has taken place in many firms dealing in fertilizers, as they are now as anxious to sell growers the proper ingredients as the growers are to secure such. The dealers recognize that only by making the use of fertilizers prove profitable can they expect to secure an increase in their trade.

OUR TEN DOLLAR OFFER.

For some months The Horticulturist has been endeavoring to encourage its readers to purchase from its advertisers by offering to give ten dollars each month to the reader purchasing goods to the greatest value from advertisers in each issue. Recently we announced that Mr. Charles Mackey, of Thornbury, had won this money for one month by purchasing goods to the value of $175.78 from the Waggoner Ladder Co. During January Mr. Mackey again applied for the ten dollar bonus, having purchased goods to the value of $31 from J. A. Simmers, of Toronto, but this time he was unsuccessful, as Mr. G. D. Ellis, of Leamington, had exceeded his purchases having purchased bulbs and plants from Mr. Simmers to the value of $37.37 and pots worth $7.23 from the Foster Pottery Co. The value of Mr. Ellis' total purchases were $44.60.

This means that Mr. Ellis received back from The Horticulturist almost one quarter of the total value of his purchases. As a handsome calendar is sent to everyone who purchases from our advertisers one of these calendars has been ordered for Mr. Mackey. The probabilities are that other readers purchased goods of greater value than Mr. Ellis did, but as they did not apply for the ten dollars the money was sent to Mr. Ellis. This should encourage other readers to apply for this bonus this month. Even if you do not win the ten dollars you will be sent a very handsome calendar provided you tell the advertisers you saw their advertisement in The Horticulturist.

The farm labor problem is still a live question. The attention of those of our readers who desire to engage help is called to an advertisement in this issue by the Bureau of Colonization. During the past two years the Farm Labor Bureau has distributed over 10,000 immigrants among the farmers and fruit and flower growers of Ontario. These immigrants have been brought to Canada as a result of the work in Great Britain of the agents of both the Dominion and Ontario governments. People desiring to employ labor should notify the Bureau of Labor. Their applications will be filed and filled as soon as a suitable immigrant asks for work. The department, when necessary, pays the railway fare of the immigrant to the nearest railway station of the person to whom he is being sent. As it is probable the first immigrants will arrive very early this year applications for laborers should be made without delay.

An advertising representative of The Horticulturist recently visited Detroit, Buffalo, Rochester and other United States cities, but was unable to secure any advertising contracts owing to the Canadian tariff. This tariff does not prevent United States fruit papers from obtaining subscriptions in Canada for a year for twenty-five cents. This means that United States horticultural publications are able to invade our subscription field but that we cannot touch their advertising preserves. It is rather hard to be hit twice at the same time by the same stick.

Two matters of great importance to fruit growers are the proper use of fertilizers and spraying. Prominence has been given in this issue to the first of these subjects, and in the March number interesting articles from experts will be published on the importance of spraying. Advertisers desiring special positions should have their space reserved at an early date.

Readers of The Horticulturist who have any spare copies of the April issue, 1903, will confer a great favor if they will send them to this office. The supply is exhausted and more are required for filing purposes.

A long and prosperous life to the recently organized New Brunswick Fruit Growers' Association. The better the fruit growers in the various provinces are united the better for the industry as a whole.

A Question and Answer

Mr. A, an apple operator, purchases apples from Mr. B, a merchant in a small town, who engages Mr. C to do the packing in the orchards of the farmers in the neighborhood. Mr. A pays Mr. B for the apples when they are delivered to him, and Mr. B settles with the farmers. According to the Fruit Marks Act whose name should appear upon the barrels ? In case of fraudulent packing or marking who is responsible ?—(J. B. H.

THE ANSWER

Alex. McNeill, Chief of the Fruit Division, Ottawa.

Mr. B as the owner of the apples at the time of packing should place his brand on the apples. Under the Fruit Marks Act A, B and C might each be prosecuted in case the apples were offered for sale fraudulently marked or packed. A under section 5 for offering for sale ; B under section 6 or 7 for fraudulently packing or marking; and C under section 4 of the order-in-council for fraudulently packing only. It will be noted that C is not responsible for the grade mark and could only be prosecuted under section 7 for the crime which is usually called "overfacing."

SELLING FRUIT IN GREAT BRITAIN ON COMMISSION

The charges that have recently been made that certain British importers of Canadian fruit have long had an understanding through which they have been able to keep down the prices of the fruit led The Horticulturist to write to Mr. W. W. Moore, at Ottawa, Chief of the Extension of Markets, to see if some of the Dominion Government's agents in Great Britain could not be utilized to investigate the truth of these charges. The following reply has been received from Mr. Moore :

Some time ago I noticed in the press a statement by a Mr. Cochrane, of Boston, in which he charged the importers of fruit in Great Britain with making fraudulent returns to apple shippers on this side of the water. As Mr. Cochrane's statement was copied by the Canadian newspapers I presume this is the matter to which you allude.

At the time Mr. Cochrane's statement appeared I noticed it, but did not consider it worth an investigation. I know something of the methods whereby the leading fruit brokers in Liverpool, London and Glasgow dispose of the apples they receive on consignment, and, as far as the principal firms are concerned, I do not believe they make fraudulent returns or act dishonestly in any way.

In Liverpool there are six firms who dispose of apples by public auction. From what I know of the manner in which these sales are conducted I do not think that it would be possible to form a combine to keep down the prices without such an arrangement becoming public. Of course, apart from the six firms I mentioned, there are a number of smaller concerns in Liverpool, each of whom handle considerable quantities of imported apples during the year. Some of these may be crooked and make false returns, but I have never heard any specific complaint regarding the business methods of any of the British fruit dealers.

This department has not "agents" in Great Britain in the proper acceptance of the term, but we have inspectors at the chief ports, whose duty it is to observe and report regarding the condition in which Canadian perishable produce is landed from the steamers and the handling it receives during the process of discharge. These inspectors are stationed at Glasgow, London, Bristol, Manchester and Liverpool. The Chief Inspector is Mr. A. W. Grindley, who is stationed at Liverpool and who has local supervision of the work of the other inspectors. Mr. Grindley is a Canadian who has held his position for over six years. He is wide awake and energetic, and is thoroughly informed regarding the selling end of the apple trade. I shall write him to-day and bring the charges, referred to in your letter, before his attention, and as soon as I receive his reply I shall transmit it to you.

A BRITISH OPINION.

The charges which have been made have attracted attention in Great Britain. The following clipping from the Manchester Daily Despatch may be of interest :

A strong appeal has been made on behalf of the fruit growers and fruit shippers of Canada to the High Commissioner to investigate certain grave accusations, formulated very definitely on the other side, against the foreign fruit trade of Liverpool, Manchester, and London. It is alleged that the English importers, who secure consignments of fruit through agents in Toronto, Montreal, Nova Scotia and Boston at prices to be determined at auction in England, have manipulated the market in collusion with the fruit salesmen of the auction rooms. By secret arrangement among the sellers and buyers concerned, the fruit is "knocked down" at prices that are unremunerative to the Canadian exporters.

Such an impeachment of the honor of gentlemen engaged in a most reputable branch of commerce, is not supported so far by sufficient evidence to warrant any special investigation by the Canadian authorities. Complaint of the low prices obtained for colonial fruit in the English market is chronic, and this year's slump in fruit, consequent upon an exceptionally abundant season, as it affects the exuberant imagination on the other side, is reflected, it is thought, in this daring indictment of the English dealers in fruit on the ground of bogus sales and control of the market by a dishonest fruit ring. The matter has gone too far in Canada, however, to warrant the trade involved in treating the charge with contemptuous silence.

PACKING APPLES IN BOXES FOR EXPORT

ALEX. C. BIGGS, BURLINGTON, ONT.

Every fruit grower with a spark of pride for the fruit industry of this country must feel humiliated by the article which appeared in the January number of The Horticulturist, on Packing Apples in Boxes, by J. B. Thomas, of London, England.

The article gives the impressions of a very prominent apple dealer upon the new and growing custom of packing apples in boxes, which he discourages, not because it is not a good style of package but because Canadians do not know how to pack apples in boxes. His words are :

"I have observed the Canadian attempts at packing in boxes, and, with few exceptions, I may say that the less we see of such boxes and such packing the better for those interested in shipping apples from Canada."

I do not agree with Mr. Thomas in the view that because we are not proficient in the packing of apples in boxes we should cast them aside. If such a rule had been applied to barrels years ago perhaps we should not be using them now. The box has its place for first-class fruit suitable for a certain class of customers, and the barrel for both first and second grades for those who favor it.

The day is coming when the markets will require that the best apples be laid down without bruising, and new appliances and methods will be adopted that will make it possible to do so. The box seems to be the best package for that purpose. I am in favor of the central packing house system, which can only be secured by co-operation.

Unpleasant Truth From a Friend

A Canadian in Paris, France, writing to the Orillia Packet makes the following remarks about the Canadian fruit sold in that city:

All the hawkers' barrows lately have been filled with "pommes de Canada"—Canadian apples, which are loudly cried as such. In fact for a day or so last week one heard "Canada" on all hands. Some Canadians I know said they were ashamed to have it announced such horrid looking stuff came from the Dominion. The apples were octagonal, not rounded.

When will Canadian packers learn to put up their stuff properly? Where the apples touch each other there is a flattened space which at once starts rot. The consequence is the apples have been selling at 10 and 20 cents a pound, while the French hand-picked and properly cared for apples fetch more than that each. If oranges are wrapped in paper why can't apples be? Properly delivered here the best Canadian apples would fetch six to eight cents each, judging by what the local fruit realizes.

Gardeners and Fruit Growers Unite

The Gardeners' and Fruit Growers' Association of the Hamilton district held a general meeting in Hamilton January 21. This is a live association, and the first gardeners' organization in conjunction with fruit growers in Ontario. The members would like to see a department in The Horticulturist on vegetable growing. This organization expects to take a prominent place among other conventions in the near future.

The proposal to place the Dominion Fruit Division under the Dairy Division was strongly opposed, and the following resolution was unanimously endorsed by the association: "Resolved, that this, the Gardeners' and Fruit Growers' Association of the Hamilton District disapproves of the proposed plan of the Dominion Government to place the fruit and dairying divisions under one head. We are of the opinion that such an act would materially cripple the fruit growing industry, and that the fruit division is of sufficient importance to have a head controlling that department; that this industry is occupying such a prominent place in the commercial trade of the country and should not be made subordinate to any other department. We strongly urge on the Hon. Sydney Fisher to exercise his influence in favor of the fruit growers of this country and to prevent the proposed union of these two divisions."—(W. C. Webster.

We have advertised in The Canadian Horticulturist for several years and find it a very good medium for reaching fruit growers.—(The W. A. Freeman Co., Hamilton, Ont.

English Fruit Market Depressed

W. A. CLEMONS, OTTAWA.

The Extension of Markets Division, Department of Agriculture, Ottawa, is in receipt of a letter from Geo. R. Meeker & Co., receivers of Canadian and American fruits, Covent Garden, London, in which the following paragraphs occur: "The great thing is to get apples over here packed as tightly as possible, and, above all, the fruit should not be in any way damaged by frost. Our market is in a state of collapse, owing, in the main, to badness of trade, and also to the fact that there are very large quantities of apples that have been placed in cold storage in Southampton. This experiment is not panning out well, and the prices are so low that we cannot imagine that they can be otherwise than ruinous. Who is the loser in the transaction we cannot say. Somebody must be getting hard hit, and we believe that will be the first and last attempt at cold storage in this country, unless exceptional opportunities present themselves in the way of short crops on this side."

The Liverpool market is also very demoralized, our agent there telegraphing us as follows: "Market very demoralized, but anticipate revival shortly; great danger in shipping frosted fruit, which prejudices trade generally."

Edward Jacobs & Sons, fruit brokers, Hamburg, Germany, write under date of January 12: "The prospects are very favorable for good apples; satisfactory prices may be realized, and we hope that some Canadian shippers will give us a trial."

A Valuable Publication.—The Horticultural Directory for 1905, recently published by the Journal of Horticulture, of London, England, is full of useful and well arranged information for all interested in horticuture in connection with trade in Great Britain. The directory contains complete lists of London seedsmen and florists, as well as in all the larger cities in Great Britain, lists of nurserymen, gardeners, and horticultural builders, engineers, implement makers, etc., making a most valuable reference for horticulturists. Horticultural societies of any prominence, with their officers names and addresses, are given, not only for Great Britain, but all over the continent, and America as well, including Canada. The value of the work can be somewhat guaged when it is known that the directory shows an increase of upwards of 4,000 new names and addresses since 1894.

Allow me to congratulate you on the excellence of the report furnished in the December issue of The Horticulturist, of the annual convention of the Ontario Fruit Growers' Association.—(R. M. Palmer, Victoria, B. C.

THE ANNUAL MEETINGS OF HORTICULTURAL SOCIETIES

The annual meeting of the Port Hope Horticultural Society was well attended, considering the weather. Those present were enthusiastic in their enthusiasm. therefore a profitable meeting was the result. The following officers were chosen: President, F. Outram; secretary and treasurer, J. G. Jackson. A committee was appointed to wait on some of the owners of vacant lots to seek permission to transform them from their dilapidated condition. It was decided to ask the town council for financial aid toward carrying out the work for the year. It was voted to continue to subscribe for The Horticulturist.—(J. G. Jackson, secretary.

MIDLAND SOCIETY.

The meeting of the Midland Horticultural Society was a decided success in spite of a heavy storm. There is a growing interest in horticulture in the town, owing largely to the free distribution of seeds to the public school children. Election of officers resulted as follows: President, F. Cook; secretary and treasurer, E. H. Piggott. We have decided to distribute more seeds this year and to put out flower beds at the schools. A liberal share of the members have sent in their names for The Horticulturist for 1905.—(E. H. Piggott, Sec'y.

PICTON SOCIETY.

Picton society elected the following officers: President, Thomas Bog; secretary and treasurer, W. T. Ross. The business brought before the meeting and plans for work this year were discussed with much enthusiasm. It was left with the secretary to ascertain the desires of members as to their receiving plants, seeds or bulbs for the spring distribution, and their preference for a magazine for the year.

GRIMSBY SOCIETY.

Each member of the Grimsby Horticultural society voiced enthusiastically the sentiment of progress. A committee of seven was appointed to select two plants for the spring distribution; another committee was appointed to arrange for a series of house meetings, at which it is proposed to have discussions on subjects pertaining to flowers, fruits, etc. Mr. Adam Rutherford was elected president and J. W. Brennan secretary.—(J. W. Brennan, Sec'y.

KINCARDINE SOCIETY.

The Kincardine society elected officers as follows: President, William Walsh; secretary and treasurer, Joseph Barker. Owing to stormy weather but few were present at the meeting, which however lacked nothing in interest and enthusiasm. The president's and secretary's reports showed that satisfactory progress had been made. Mr. Barker expressed the belief that the membership will be increased this year to at least 150, while President Walsh was of the opinion that the 200 mark should be reached. The treasurer's financial report showed receipts for the year were $281.40 and expenses $274.54. About 125 copies of The Horticulturist were distributetd among the members in 1904, and the secretary reported that "The Horticulturist is highly prized, as is evident from the anxiety manifested by members when any of the numbers happen to go astray."—(Jos. Barker, Sec'y. (Copies of both the president's and secretary's reports were received by The Horticulturist, but had to be omitted owing to lack of space.)

OTTAWA SOCIETY.

The Ottawa society elected W. G. Black president and J. F. Watson secretary and treasurer. The improvement of the city on horticultural lines is the aim of this society, and the city council is to be asked for aid in the shape of a grant of money and legislation. The matter of pruning and planting trees on the streets of the city was thoroughly discussed. The society has done good and great work in the past, but is in need of money to extend its influence. Most of the money received by the society is paid out in premiums to the members. During 1904 one annual meeting, six general meetings and exhibitions, and six directors' meetings were held. Cash prizes amounting to $301.75 were paid, and the balance in the treasury is $28.85. The membership was 226.

ORANGEVILLE SOCIETY.

The Orangeville Horticultural society elected Mr. Robert Mann president and reappointed Mr. Andrew Hill secretary-treasurer. The president reported that fruit trees, ornamental shrubs and flowering bulbs had been distributed to the value of $106.55, copies of The Horticulturist had been sent to the members, together with a most interesting and useful pamphlet on bulb culture, and bound copies of the annual report of the Fruit Growers' Association. The society has kept alive an interest in horticultural matters in the neighborhood and has been able in many ways to assist in the improvement of the home garden and orchard. The total disbursements, in horticultural effort, amounted to over $245. A committee was appointed to select the plants for distribution this year.—(A. M. Hill, Sec'y.

ELMIRA SOCIETY.

The Elmira society elected Mr. R. B. Martin president and C. W. Schierholtz secretary and treasurer. The membership was 61, and it is hoped that this number will be materially increased this year. The society intends to hold a flower show during the summer, and meetings for the discussion of floricultural and horticultural subjects. A distribution of seeds and plants will be made in the spring. A balance of $55 is on hand.

WOODSTOCK SOCIETY.

The Woodstock society elected for their officers: President, Mr. R. W. Woodruff, and secretary and treasurer, Mr. M. Dawes. A vote of thanks was given to Mr. J. S. Scarff, the retiring secretary, for his untiring and earnest efforts. The president's address showed that the society had endeavored to secure a park commission, composed of members outside the city council, which it was the opinion would be a long step in advance of the present system. In all probability the society will take the matter up at a later date. The annual flower show was held in August and was the best ever held in the city. The society expended during the year $86.09 on plant distribution and $90.80 on horticultural publications, The Horticulturist being a favored one. The president suggested that it would be a wise move for the members to take another step forward by putting the care of the parks of the city under a more permanent management. A balance of $58 was shown in the treasury.

LONDON SOCIETY.

The London society elected as president Mr. Charles James Fox, and secretary and treasurer, Mr. R. W. Rennie. During the year five meetings were held for business, in addition to the annual meeting. Two very successful flower shows were given in the summer. At both these shows the displays were very fine. Two distributions were made to the members in the spring, three named perennial phlox were given, and a good supply of aster seed. In the fall each member received 25 choice tulip bulbs. "Gardening," a semi-monthly publication, was subscribed for and mailed to each member during the year ; it proved to be too professional in its character and entirely unsuited to the requirements of the members. It will consequently not be renewed this year. In the early part of the year a civic improvement society was organized. To it was transferred the management of the garden competitions and the awarding of prizes for the best kept school grounds in the city. This new society has already been able to effect some of the improvements aimed at.

OWEN SOUND SOCIETY.

The meeting of the Owen Sound Society was rather poorly attended, but much enthusiasm and interest was shown. Dr. Allan Cameron was chosen as president, and Miss Lou A. Harrison was re-elected as secretary and treasurer. The meeting February 24 will be an interesting one, the subject for discussion being How best to beautify our cemetery and parks. Subjects for future meetings will be arranged at an early date.

SIMCOE SOCIETY.

The Simcoe society devoted itself last year to giving out trees, shrubs, plants, seeds and small fruits, thus improving the homes of members, and aiding others in the same work and beautifying the town. Only one meeting was held, and that in winter, when the Department of Agriculture sent the speakers. We distributed to school children many garden and flower seeds, and they were much interested in the growth and care of the same.—J. Thos. Murphy, Sec.-Treas.

Two Year Old Tea Roses (for Easter blooming)

GERANIUMS (newest varieties), GLOXINIA and TUBEROUS ROOTED BEGONIA BULBS, PIERSON and BOSTON FERNS, BEGONIAS, AZALEAS (in bloom), OTAHEITE ORANGES (in fruit), CANNAS (dry roots), CHRYSANTHEMUMS (large stock of young plants in a few weeks).

Quotations cheerfully and promptly furnished.

The Webster Floral Co., Limited, Hamilton, Ont.

Florists, Nurserymen and Seedsmen

The Capelton Chemical & Fertilizer Co'y

ESTABLISHED 1890

Brands Manufactured : Royal Canadian, Victor, Crown, Corn, Reliance, Capelton

You should use Fertilizers on everything from House Plants to Field Crops, as it pays to get out of the soil all it can produce. The only way to do so is to feed the plants with fertilizers as you do your stock. NO WEEDS, NO CUT WORMS, MUCH LARGER CROPS WITH IT THAN WITHOUT.

Help build up Canada by using Canadian goods as everything used by us excepting Muriate of Potash is produced in Canada. The Government Reports for past years show, that we give better value for your money than any Fertilizers on the market.

We never lose a customer who once uses our goods. Give us a trial order for a few hundred pounds. say $5.00 worth, telling us what you want to use it for We guarantee you will be regular customers ever after. If there is no agent in your section, write direct. Agents wanted in every county and township in Canada.

The Capelton Chemical & Fertilizer Co., Buckingham, Que.

THE TORONTO SOCIETY.

At the annual meeting of the Toronto Horticultural Society H. R. Frankland was elected president ; W. G. Rook, first vice-president ; Geo. Musson, second vice-president ; Charles E. Chambers, secretary, and W. G. Rook treasurer.

ORILLIA SOCIETY.

Orillia's society elected C. L. Stephens president and T. W. Robbins secretary and treasurer. The treasurer's report showed an expenditure of $168.65, with receipts of $187.83. Membership for the year was 81. There were 586 entries at the fall flower and fruit show, and $175 was given in prizes. The society has decided to supply the pupils of the various schools with seeds and to offer prizes for competitions for flowers grown from these seeds. It was proposed to renew the efforts to have the streets, lawns, etc., kept more tidy and uniform.

LINDSAY SOCIETY.

The attendance at the annual meeting of the Lindsay society was not large. The secretary's report showed a balance on hand of $34.50. The officers elected were : President, Mr. Robert Chambers, and secretary and treasurer, F. J. Frampton.

CAYUGA SOCIETY.

By paying $1 every member of the Cayuga Horticultural Society will be entitled to select one of the following : The Canadian Horticulturist for 1905 and seven Norway spruce 2 feet high, or five shrubs of leading varieties, or 65 gladiola, or 33 choice gladioli ; second, seven Norway spruce trees 2 feet high, and 65 gladioli or 33 choice gladioli, all of which will be supplied by Campbell Brothers, of Simcoe ; or third, one dozen bedding geraniums, mixed colors, and one dozen coleus or ageratum.—(A. K. Goodman, secretary.

Toronto Gardeners and Florists

The newly elected officers of the Toronto Gardeners' and Florists' Association are George Douglas, president ; E. F. Collins, secretary, and Geo. Mills, treasurer. The representatives to the Industrial exhibition are J. H. Dunlop and W. H. Foord. The above are all active members and the association should have a successful year.

The executive has prepared an interesting program of subjects for the monthly meetings. The annual carnation show will be held in St. George's Hall, February 16, when the exhibits of roses and carnations promise to be the finest ever seen in Canada.

Am very well pleased with The Horticulturist. Hope you may be able to continue improving it in the future as in the past.—(T. A. Chapman, Baltimore, Ont.

Experience Counts

Having spent 25 years in the fruit business, we know fairly well the wants of our customers. Scions and buds are taken from bearing trees in our orchards. Therefore, we know what we grow.

Buy the Best

We grow first-class stock and always send everything **True to Name**, because we believe **Honesty is the Best Policy** ; and our system of labelling is perfect.

Apple Trees

Largest and best stock in Canada.

All standard varieties of **FRUIT TREES, ORNAMENTALS, PLANTS and VINES**

Salesmen Wanted. Write for Illustrated Catalogue.

E. D. SMITH, - - Winona, Ont.

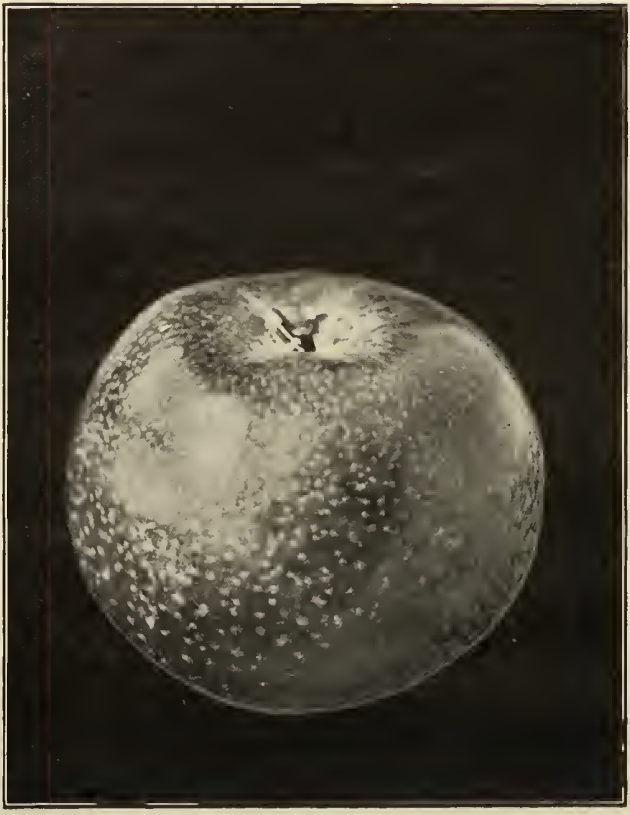
MARCH

The stormy March is come at last,
With wind, and cloud, and changing skies;
I hear the rushing of the blast,
That through the valley flies.

Ah, passing few are they who speak,
Wild, stormy month! in praise of thee;
Yet, though thy winds are loud and bleak,
Thou art a welcome month to me.

For thou, to northern lands, again
The glad and glorious sun dost bring,
And thou hast joined the gentle train
And wear'st the gentle name of Spring.

BYRANT.



The Spencer Coreless Apple Described in This Issue.

The Coreless Apple in the Basket Sent to the King.

(Photographs furnished exclusively to The Canadian Horticulturist.)

The Canadian Horticulturist

MARCH, 1905

VOLUME XXVIII ❖ NUMBER 3

THE CORELESS APPLE*

SAMPSON MORGAN, BROADSTAIRS, ENGLAND.

I HAD the honor of introducing the first coreless and seedless apple to Great Britain. Its arrival evoked great interest among all classes. I have been asked to put on record an account of this wonderful novelty, and for Canada have selected The Canadian Horticulturist for the purpose. The apple was sent to me by the secretary of the Spencer Seedless Apple Co., of Colorado, at the wish of Mr. Spencer, the introducer, with instructions to bring it before the notice of the British public.

A box containing the first coreless apples ever received in England was delivered to me at Broadstairs, January 22. The first specimen taken from the box I put aside for the King. In the near future seedless and coreless apples will be on sale in the fruit shops of every city in the United Kingdom.

The tree produces a cluster of small green leaves, like a disorganized bud. It is here that in due course the fruit forms. There being no petals or fragrance the codling moth, which has wrought great devastation in our orchards, passes it by, and thus few, if any, of the coreless apples are marred or injured by the grub of that pest. The trees are being propagated from buds, no seeds being available.

The permanency of the seedlessness of the Spencer apple is beyond dispute. Over 2,500 trees are already in hand, and the stock is being extended. Arrangements are in progress to ensure ample supplies of these wonderful novelties in England.

The Spencer seedless apple is not the first seedless apple which has been grown. Probably half a dozen trees have appeared at different places bearing apples without seeds. Besides, the apples which grew on the original trees had little juice, and being small, were of no commercial value. The originator of the Spencer seedless apple first succeeded in getting five trees which yielded fruits practically without seeds. From these five trees he budded and grafted to see if they would reproduce themselves. He has now in his orchard trees four, six and eight years old bearing seedless apples.

As these trees stand in close proximity to ordinary apple trees, a small percentage of the apples on the seedless trees have one and sometimes two or three seeds, but they are just as apt to appear in one part of the apple as another. Mr. Spencer has found a seed within one-eighth of an inch of the outer peeling of the apple, far removed from its core. It is impossible for the Spencer seedless apple to bear seeds of their own accord. The seed, which is occasionally found, is produced by the pollen from the common apple trees being carried to the seedless trees by bees or the wind. Wherever this pollen is deposited, conditions being favorable, will be found the seed. There is a small quantity of pollen, also a stamen, as in the ordinary apple tree, and probably not over one-twentieth the amount of pollen on the seedless buds that there is on the common tree blossoms.

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* In the April issue of The Horticulturist will appear an article by Mr. W. T. Macoun, Horticulturist of the Central Experimental Farm, Ottawa, in relation to seedless apples that have been grown in Canada.

MAY REVOLUTIONIZE APPLE GROWING.

The originator claims that his are the only seedless apple trees in existence which one can bud and graft from, and obtain trees that will produce seedless apples; also that there are no other seedless apples of any commercial value. These apples from the seedless trees grow as large as the ordinary winter apple and contain as much juice. They are red when fully matured, and have large strawberry dots. The flesh is firm and they are excellent keepers.

It has been proved that the further we get away from the original proposition (five trees) the larger and better is the fruit. The seedless trees are very prolific bearers. There is an absolute saving of about 25 per cent. in the seedless apples on account of there being no waste except the peeling. This fact cannot be over-estimated when it comes to evaporating and drying the fruit.

For the hotel and restaurant trade, as well as for family eating and cooking, the absence of seeds or seed pockets is a great convenience. In the green apples, from the time they first appear until one-half or two-thirds grown, traces of the seed pockets may occasionally be found. By the time the apples reach full maturity, except in rare cases, this semblance of a seed pocket becomes absorbed into the solid meat of the apple. There being no seeds in the apple, there is no need for seed pockets, consequently nature eliminates them of her own accord.

Mr. Spencer has 50 bearing trees in his orchard, and the younger trees (four years old) yield apples which have only a yellow fibrous substance, of no toughness whatever, representing the seed pockets. There is only one variety of seedless apple, and as that is quite distinct from any other, it has been called the Spencer seedless apple. Experiments are being tried on 12 or 15 of the best varieties of apples, and possibly in a few years the leading apples of commerce will be seedless. The Spencer seedless apple tree may revolutionize the apple industry of the world.

Marketed in large quantities these apples, even when they are no longer novelties, will command five dollars a bushel wholesale. At that price, if the trees are as prolific as they are stated to be, the apple should prove far more profitable to growers than even the Ribston pippin. For some years the trees, and also the fruits, will be very expensive. Even if the sanguine expectations of their originator are realized their introduction will not injuriously affect apple growing industries carried on by experienced cultivators, but it will happily drive from our markets those inferior and out of date sorts which are the chief cause of those periodic market gluts so ruinous to fruit producers.

For the commercial grower the new apple is admirably suitable. When available hundreds of thousands of bushels can be disposed of each season easily at excellent prices. A late apple of the color of the coreless apple is an undoubted acquisition to the trade.

By desire, this record of the introduction of the coreless apple to Great Britain, as published in The Canadian Horticulturist, will be filed by various state horticultural societies and colleges in Canada, the United States, England, Ireland, Scotland and Wales.

The apple sent to King Edward was photographed in two positions before being despatched to Windsor Castle. In acknowledging its receipt His Majesty's private secretary wrote: "The King has been much interested in seeing the apple which

Mr. Morgan sent." The private secretary also asked me to let him know "when any more of the seedless apples arrived in England from Colorado."

Two of the apples were disposed of by auction by Messrs. Garcia, Jacobs & Co., the well known Covent Garden fruit salesmen, in aid of a fund being raised for the "Starving Poor of West Ham." An immense crowd of buyers assembled to watch the proceedings. The two apples were sold for 60 shillings, which is equal to 3,000 shillings a bushel, the highest price ever paid for apples in any market in the world.

COOPERATIVE SPRAYING BY GROWERS

ALEX. M'NEILL, CHIEF OF THE FRUIT DIVISION, OTTAWA, ONT.

IN the spring of 1903 the Fruit Division, Ottawa, determined to test the efficiency of power spraying. An outfit with a gasoline engine was purchased from the Spramotor Company, London, and placed in the charge of Fruit Inspector Carey and Mr. J. C. Harris, at Ingersoll. Contracts were taken from the farmers between Ingersoll and Woodstock to the extent of about 3,000 trees, and during the season these trees were sprayed four times.

The results were quite satisfactory; nevertheless, the demonstration was continued in 1904 for the purpose of confirming the experience of 1903. Again 3,000 trees were contracted for and sprayed four times at a cost of 5c. per tree for each spraying. The object of these demonstrations was not to prove that spraying was a good thing so much as to devise some method whereby farmers would be induced to spray their trees. The result has justified the experiment. The outfit will remain in Ingersoll this year, but will be operated by private individuals, a result which was anticipated when the demonstration was undertaken.

The result of the work in Ingersoll has demonstrated two or three points very conclusively. First, that power spraying is not materially cheaper than spraying by hand; second, that power spraying is more effective than hand spraying; third, that it is so much more convenient that farmers, who could not be induced to spray with hand pumps, will readily pay even more than the commercial rate in order to have the work done for them. And once more, it has been demonstrated that spraying is one of the best paying operations in the care of an orchard.

The season of 1904 developed fungus to a very serious degree in the county of Oxford. Unsprayed orchards did not usually yield more than 10 or 15 per cent. of apples that would grade as No. 1. This rendered it almost impossible to secure buyers in the Ingersoll markets during the fall months and, as a consequence, many unsprayed orchards were never picked, and those that were picked yielded only about the price of the picking and packages. The sprayed orchards, however, yielded about 90 per cent. of No. 1 fruit, and without an exception were all sold, some of them not at a high price but at a price that was deemed satisfactory for the season.

The results may be put another way. Accepting the average of two barrels per tree, the cost of spraying would be 10 cents per barrel. The difference in the price obtained for the sprayed fruit would be at least 75 cents per barrel on the tree, leaving a net profit of 65 cents per barrel for spraying. This is putting the financial side of it somewhat moderately. It is a common excuse with farmers for not spraying that there is too much other work to do. To such farmers I would say that there is no work on the farm that will yield so large a dividend as this of spraying; consequently it will pay much better to neglect other work rather than to neglect the spraying.

GROWERS MUST BE PREPARED TO SPRAY

RICHMOND F. ROBINSON, ST. CATHARINES, ONT.

TO succeed in fruit growing a man must be prepared to spray and spray carefully and regularly just as he prunes or cultivates his orchard. Apart from the advantage to the fruit spraying is of great benefit to the trees. They are more thrifty and hold their foliage considerably later in the fall.

It is impossible for me to state how much any fruit was increased in value as a result of spraying last season, but I do know that I had no unsaleable fruit on my farm last year, and that by the use of lime and sulphur I had good crops of plums and peaches. Though curl leaf was prevalent I had none on any of my peach trees, except 40 or 50 two-year-old Yellow St. Johns which I had not sprayed.

Mr. Blaikie, a neighbor, and I purchased a Niagara gas sprayer, worked by liquid carbonic acid gas, last February. I cannot say how many trees we sprayed in an hour, but we put 600 gallons, wine measure, of lime and sulphur on in a day, and we were novices. The mixture was applied very thoroughly even wastefully. The lime and sulphur mixture is hard to put on as it clogs the nozzles. We had to fill the tank bucket by bucket instead of elevating the barrels or pouring in by means of a long funnel, as we shall do in future. With sufficient nozzles 1,200 to 1,500 gallons can be put on by three men in a day. The machine saves time, labor and material. I had previously used a hand sprayer, and if I had to pay twice what I did for the gas sprayer I would do it sooner than waste time with a hand sprayer, which is as much behind the times as a hand reaper.

Lime and sulphur will not only control San Jose scale, but make it a blessing in disguise, as those who do not spray will inevitably go to the wall. If I had no scale I would spray with lime and sulphur as a fungicide. By applying the Bordeaux mixture in time last season I succeeded in checking a good deal of rot in my plums and sweet cherries. If applied early and frequently the Bordeaux mixture will check the black rot in the grapes.

NEW BRUNSWICK FRUIT GROWERS ORGANIZE

W. D. ALBRIGHT, SUSSEX, N. B.

AS secretary of the newly organized New Brunswick Fruit Growers' Association it is my duty to inform The Horticulturist of what has been done towards organizing the horticultural interests in this province. In December a meeting of maritime horticulturists was held in the Winter Fair building, Amherst, where the New Brunswick Fruit Growers' Association was organized with provisional officers as follows: President, J. C. Gilman, Fredericton; vice-president, Geo. McAlpine, Gagetown; secretary-treasurer, W. D. Albright, Sussex, and a director for each county.

The next meeting was held at Fredericton, January 27, the evening following the convention of the New Brunswick Farmers' and Dairymen's Association. A constitution was adopted along much the same lines as that of the Nova Scotia Association and officers were re-elected with the addition of a separate treasurer in H. Wilmot, of Oromocto. A profitable session was held. The membership numbers 32, and the balance of funds on hand is $27. It is hoped a grant will be received from the local government and to carry on an active campaign of educational and cooperative work. Among the things to be taken up is the purchase of nursery stock for members. Only reliable firms will be dealt with, and thus one of the most common sources of vexation and loss will be avoided. Cooperation in packing, marketing, etc., will be considered later. Two or three orchard meetings will be held during the summer and a convention about the end of the year in the fruit sections of the province.

Pruning Cherry Trees

A cherry orchard (sour), 16 years old, set 16 feet apart each way, has grown up so high as to make the fruit ripen unevenly and hard to pick. Is it safe to head back the topmost branches, say six feet, of course painting the wounds made ?—(R. Robinson, St. Catharines, Ont.

W. T. Macoun, Horticulturist, Experimental Farm, Ottawa: Severe pruning of cherry trees causes gumming of the trees and weakens the trees considerably. If it can be avoided, it is not wise to prune cherry trees severely. In the present case it would be well to prune a few trees the first season and see the effect. If no gumming occurred, the work could be continued the following year. Much depends on the health of the trees, and if they are as vigorous as stated I do not believe that severe pruning would injure them much.

Prof. H. L. Hutt, O.A.C., Guelph: This is the inevitable result of the common mistake of planting trees too closely together. Severe heading back will remedy matters to some extent, but it is an injury to the tree. Such trees may be pruned back severely and still form good heads. Mr. Peart, my assistant, says he once had a similar case to deal with, and the main branches were cut back to stubs two or three inches in diameter and only a few feet from the trunk. Yet these trees have formed new tops and have done well. This, of course, involves loss of crop for two or three years.

Pro. L. R. Taft, Michigan Agricultural College: A great deal will depend on the growth and shape of the trees. While severe pruning of the cherry is not advisable, it might be well ,under the conditions mentioned, to head back the branches, but I would hardly recommend the removal of as much as six feet of the growth unless there are numerous side branches lower down on the limbs.

Spraying for San Jose Scale

ROBERT THOMPSON, ST. CATHARINES, ONT.

The San Jose scale is slowly but surely spreading every season into fresh orchards and widening the infested areas; but, judging from the results of thorough spraying, I can safely say that the scale can be held in check and the trees kept healthy and the fruit almost entirely clean. Spraying with lime and sulphur in the proportions of 15 to 18 pounds of lime, and the same quantity of sulphur, to 40 gallons of water, and boiling two to two and a half hours, has given as good results as any mixture.

In several instances by using 20 pounds of sulphur, 25 pounds of fresh lime and 12½ pounds of sal soda to 40 gallons of water, and allowing the lime and soda to boil with its own heat for three-quarters of an hour, slaking the lime with hot water, excellent results have been secured. One point of great importance is that the spraying must be thoroughly and carefully done. This mixture is cheaper and is not so hard to apply as when 40 pounds of lime to 40 gallons of water is used. It is not necessary to use the lime and sulphur as hot as it was used two years ago.

The law regarding the scale is sufficient protection if it is enforced. Infested trees, when the owner will not treat them, should be taken out and burned. The San Jose scale is not much worse to combat than the potato bug if taken in time and if spraying is done once a year. The man who will not spray will soon lose his trees.

Importations of Vegetables

THE following statement, showing the quantity and value of vegetables imported into Canada from the United States, and entered for consumption at the ports of Montreal and Toronto during the fiscal year ended June 30, 1904, and the duty collected on each item, has been laid on the table of the House of Commons at Ottawa by the Minister of Customs:

MONTREAL.

JULY TO DECEMBER, 1903, INCLUSIVE.

Articles.		Quantity.	Value.	Duty
Melons	No.	17,597	$ 764	$ 191.00
Potatoes	Bush.	1,641	2,370	446.15
Potatoes, Sweet..	"	3,023	2,400	302,30
Tomatoes, Fresh.	"	15,142	16,938	4,722.20
Tomatoes, Can'd.	Lbs.	292,863	10,539	4,392.94
Vegetables, Other	$		14,106	3,526.50
Total, 6 months			$47,117	$13,581.09

JANUARY TO JUNE, 1904, INCLUSIVE.

Articles.		Quantity.	Value.	Duty.
Potatoes	Bush.	1,793	$ 1,815	$ 268 95
Potatoes, Sweet ..	"	433	774	43.30
Tomatoes, Fresh .	"	9,178	23,325	4,368.10
Tomatoes, Canned.	Lbs.	55,772	3,400	836.38
Vegetables, Other.	$		39,477	9,869.25
Total 6 months..			$70,791	$15,385.98
Grand total 12 months.			$117,908	$28,967,07

TORONTO.

JULY TO DECEMBER, 1903, INCLUSIVE.

Articles.		Quantity.	Value.	Duty.
Melons	No.	97,522	$5,627	$1,409 75
Potatoes	Bush.	1,414	1,292	212.10
Potatoes, Sweet .	"	5,178	4,037	517.80
Tomatoes, Fresh.	"	8 726	10,224	2,777.60
Vegetables, Can'd	Lbs.	148,747	7,047	2,231.20
Vegetables, Other	$		10,432	2,608.00
Total 6 months.			$38,659	$9,753.45

JANUARY TO JUNE, 1904, INCLUSIVE.

Articles.		Quantity.	Value.	Duty.
Melons	No.	7,662	$ 775	$ 193.75
Potatoes	Bush.	3,279	3,755	491.85
Potatoes, Sweet..	"	337	479	33.70
Tomatres, Fresh.	"	7,191	17.661	3,204.30
Vegetables, Can'd	Lbs.	55,231	4,156	829.07
Vegetables, Other	$		28,160	7,040.00
Total 6 months.			$54,986	$11,792.67
Grand total 12 months			$93,645	$21,546.12

The Vicar Pear

L. WOOLVERTON, SUPT. ONTARIO FRUIT STATIONS, GRIMSBY, ONT.

A GENTLEMAN in the County of Waterloo sends a sample of a pear for identification. The pear, he says, matured in December, and when he wrote early in February, was still in good condition. The tree is a heavy bearer. For an ordinary sized tree, one barrel of fruit would be a fair crop, but in 1903 it bore three barrels of pears, of which 90 per cent were marketable, and in 1904 one barrel of marketable fruit. The Toronto men believe it to be Buerre d'Anjou, but it does not quite correspond with the description. "I hope," he adds, "that you can give me the correct name of the pear."

The pear is a fair sample of the Vicar of Winkfield, which was described and illustrated in my report to the Minister of Agriculture for the year 1901, page 22. It is an old French pear, introduced into cultivation about the year 1760, and now distributed in France under different names. It was introduced into England by the Vicar of Winkfield, hence its English name. I have grown the pear over 30 years in my experimental orchard near Grimsby, and have come to the conclusion that it should not be highly commended. The tree is fairly productive, but inclined to suffer from blight; while the fruit, though large in size and an excellent keeper and shipper, carrying as well as an apple, lacks color to make it a good seller, and has not good enough quality to commend it for the home garden. Its season is December to February.

The British Columbia Fruit Growers' Association is asking the local legislature to increase its annual grant. It also asks the Department of Agriculture to arrange for a national convention of fruit growers next autumn.

New York Fruit Growers

W. H. BUNTING, ST. CATHARINES, ONT.

THE annual meeting of the Western New York Horticultural Society, and their 50th anniversary, was held in Rochester, N. Y., January 25 and 26. Notwithstanding severe weather, there was a large attendance from all over New York State, and a number of representatives from neighboring states.

Addresses were delivered by Prof. Bailey, on the history and outlook of the society; by Prof. Craig, on the apple orchard, supplemented by a series of very interesting stereoptican views; by Prof. Atwood, on the threatened invasion of the gypsey moth, and by Prof. Jordan, Prof. Beach and others. The discussions on the various subjects were animated and showed the fruit growers across the line are alive to the importance of their calling and the necessity for keeping abreast with the investigations of the experimenters and practical men of the day.

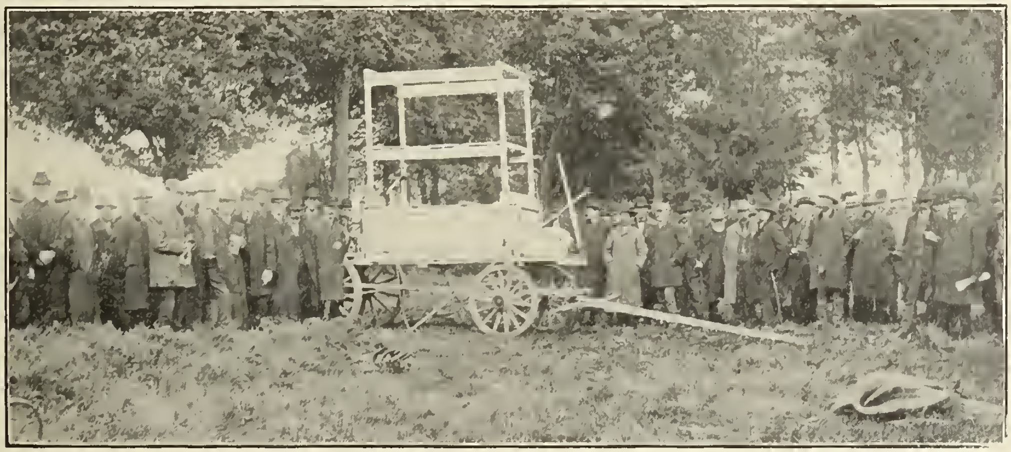
The display of fruit was exceptionally fine, and the exhibition of spraying machines and orchard appliances was of large proportions and great interest. Mr. Barry and Mr. Hall were unanimously re-elected to the offices of president and secretary-treasurer.

Another Testimony For Spraying

A. HEAZLITT, ADOLPHUSTOWN, ONT.

FOR spraying I use a pump purchased about 12 years ago for which I paid $16. This included barrel and blocks and double hose. It takes three men to run it; one to each hose, one to drive the horse and do the pumping. I spray for the codling moth, soon after the blossom falls, when the little apple is pointing upwards, and again in three or four weeks. I use four ounces paris green and one quart of new lime to 40 gallons of water. We can spray about 45 trees in an hour. We have no San Jose scale. A neighbor who has tried all kinds of sprayers agrees with me as to the value of my pump. I fully believe in the value of spraying.

Prices were very low last year, but had I not sprayed I would not have been able to dispose of my apples at any price. Spraying is O. K.—(Fred. Heeney, Ingersoll.



Fruit Growers Examining the Results of Cooperative Spraying

In this issue Mr. Alex. McNeill, Chier of the Fruit Division, describes the results of the cooperative spraying, conducted under the direction of the goverement, in the Ingersoll district. The illustration shows fruit growers inspecting the sprayed and unsprayed orchards ast fall. (Photograph taken especially for The Canadian Horticulturist.)

THE ONTARIO FRUIT EXPERIMENT STATIONS *

REPORT OF THE INSPECTOR, PROF. H. L. HUTT, GUELPH, ONT.

Fruit trees in the St. Lawrence Valley suffered severely last winter. Mr. Jones, of Maitland, the experimenter, has made careful note of the relative hardiness of the different varieties. He has a good general collection of the hardiest varieties of fruit, made up of 74 varieties of apples, 40 of pears, 51 of plums, and 11 of cherries. Only a few of the hardiest varieties of pears and plums survived the winter, and none of them, with the exception of the American plums, fruited satisfactorily.

Many varieties of apples supposed to be quite hardy were not sufficiently so to stand the severity of last winter. A young orchard of 150 Ontario apple trees, three years planted, was entirely destroyed. Blenheim, Ben Davis and Stark trees also were killed or more or less severely injured. Even large trees of Fameuse and Scarlet Pippin, which had been bearing regularly for the past 20 years, were killed outright. In nearly all cases, however, these were trees which had weakened their vitality by over-bearing the previous year. Trees of the same variety along side, which bore no crop in 1903 were quite healthy and bore heavily this year. In this connection a valuable lesson may be learned as to the importance of keeping trees at all times in good health if possible, and not allowing them to lose vigor through over-bearing, attacks of insects, fungii, or other causes.

Mr. Jones is a strong believer in the importance of hardy stock for top working the less hardy varieties upon. He has set out about four acres of McMahon White apple trees, and has top-grafted them with scions selected from his most productive and best colored Fameuse trees. In this way he will soon have an orchard of hardy productive trees bearing fine, high colored fruit as the result of careful selection of scions.

For a commercial orchard Mr. Jones has found the Fameuse, McIntosh and Scarlet Pippin the most profitable varieties for his section, but for a general home collection, covering the season from early to late he recommends the following:

APPLES: Yellow Transparent, Astrachan, Duchess, Alexander, Fameuse, McIntosh, Scarlet Pippin, Wealthy, Milwaukee, Scott's Winter, and Golden Russet.

Pears and plums cannot be relied upon for a profit in that section, although a few may be grown for home use. The following are the varieties which Mr. Jones recommends as a result of his testing so far:

PEARS: Flemish Beauty, Clapp's Favorite, and Ritson.

PLUMS: Whittaker, Wolf, Stoddard, Red June, Mana, Ogon, and Glass Seedling.

CHERRIES: Early Richmond, Montmorency, Orel, and English Morello.

THE GRIMSBY STATION.

Mr. L. Woolverton, of Grimsby, the experimenter at this station, has 100 acres closely planted with fruit. His collection of varieties is one of the largest and most representative to be found in Ontario. It is made up of 50 varieties of apples, 60 of pears, 60 of plums, 100 of peaches, 100 of cherries, 5 of quinces, 12 of apricots, 104 of grapes, 15 of currants, 40 of gooseberries, and 50 of strawberries.

The following are the varieties he recommends for planting in his section:

SWEET CHERRIES: Governor Wood, Napoleon Knight, Tartarian, Elkhorn, and on clay soil, Windsor.

SOUR CHERRIES: Montmorency and English Morello.

Mr. Woolverton has about 200 Windsor cherry trees six or seven years old which have made good growth, but borne very little fruit, while trees of the same variety on heavy soil at Mr. Orr's a few miles farther west have fruited heavily. Last winter killed the fruit buds on most of the

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The first part of this report was published in the February issue.

sweet varieties in Mr. Woolverton's collection, and the crop as a consequence last season was light. The sour varieties came through the winter uninjured and bore heavily.

THE SIMCOE STATION.

In this section of Ontario hardiness is necessarily a first consideration in the selection of varieties of fruits for planting. Mr. G. C. Caston, of Craighurst, the experimenter, has an excellent general collection of apples, pears, plums, cherries, and the small fruits, which he has had under careful test for a number of years. He is thus in a position to give valuable information on any of the fruits suitable for that district. He strongly advocates the plan of top working the best varieties of apples, such as Spy and King, upon hardier stock, such as the Talman Sweet. The advantage gained by this practice was quite evident this year after the severe test to which the trees were put last winter. The varieties of apples which he recommends for that section are: Duchess, Alexander, Peerless, Snow, Blenheim, Greening, Fallawater, Ontario, Spy, Gano, and Stark. The Baldwin, Greening, King, Spy and Ontario, he says, should always be top grafted on hardy stock in that district.

Out of the 25 varieties of cherries tested for a number of years he recommends Ostheim, Orel No. 24, Russian No. 207, Bessarabian, Montmorency and Dyehouse. Mr. Caston has been very successful in the cultivation of raspberries and blackberries, which not only bear well but bring profitable prices in the local markets. The Cuthbert has been his best red raspberry, while Agawam and Eldorado have been his most profitable varieties of the blackberry.

THE BAY OF QUINTE SECTION.

This section is in the centre of one of the best apple growing sections of Ontario, and nowhere else in the country do I know of a more successful apple grower than our experimenter, Mr. W. H. Dempsey, of Trenton. His annual crop averages about 2,000 barrels. Last year it was somewhat over that amount.

Mr. Dempsey has in his orchard 300 varieties of apples, 40 of pears, 30 of plums, 6 of cherries, 3 of peaches, and 2 of quinces.

The following are the varieties he recommends for planting in his section:

APPLES: Thirteen of the leading commercial varieties in order of their ripening: Duchess, Gravenstein, Alexander, Trenton, Wealthy, Fameuse, McIntosh, Blenheim, King, Greening, Ontario, Baldwin, Seek, Spy, Stark, and Ben Davis. Thirteen of the choicest varieties for domestic purposes in their order of ripening: Primate, Duchess, Gravenstein, Trenton, Wealthy, Fameuse, McIntosh, Pomme Grise, King, Greening, Ontario, Seek, Spy, Swayzie, Pomme Grise, Jonathan, and Talman. A few of the most promising new varieties: Star, Fanny, Garden Gem, Parlines Beauty, Coe's River Beauty, Winter Banana, Boiken, Windsor Chief, and Rome Beauty.

PEARS: Gifford, Tyson, Clapp's Favorite, Bartlett, Boussock, B. Hardy, White Doyenne, Dempsey, Bosc, Clairgeau, Goodale, Lawrence, Josephine de Malines.

PLUMS: Saunders, Burbank, Abundance, Imperial Gage, Lombard, Shipper's Pride, Chabot, Niagara, Damson, Reine Claude.

CHERRIES: Early Richmond, Montmorency.

PEACHES: Fitzgerald stood last winter uninjured.

QUINCE: Orange.

IN NORTHERN ONTARIO.

Last year was a severe test for the hardiness of trees in Northern Ontario, and some valuable lessons have been learned at the Algoma Station, conducted by Charles Young, of Richard's Landing, who is an enthusiastic fruit grower and a careful observer.

I cannot give a better idea of some of Mr. Young's work than by quoting a few of his answers to questions I put to him last summer. In answer to the question as to what kinds of fruits he is growing he says: "I am trying to grow a little of almost everything in the way of fruit except peaches, without making a specialty of any one thing. The work so far has been purely experimental. If the question had been what made the most money I would have answered without any hesitation strawberries, and after that fall apples. I have in round numbers 35 of apples, 9 of pears, 12 of cherries, 11 of plums, 8 of strawberries, 10 of gooseberries, 7 of currants, 5 of raspberries, 8 of black raspberries, and 8 of grapes."

In answer to the question, "What varieties of apples would you recommend for planting in your section," he said: "I will make the list very short. Fall—Astrachan, Duchess, Charlemoff, Yellow Transparent, Gideon. Early winter—Longfield and Wealthy. Scott's Winter is the best late winter, but it by no means fills the bill. A late keeping apple of good size and quality and as hardy as some of our fall apples we have not got so far. I thought we had it in the Ontario, but last winter was too much for it, although I think if the trees had been a few years older it would have come out all right. As it is now, I am disappointed in this apple."

Replying to a question as to how trees wintered in his section he said: "They apparently came through the winter fairly well, but the spring or early summer killed 20 per cent. of them. The summer and fall of 1903 were extremely wet here, which induced a long sappy growth which was not fully matured when winter set in. We had no fall to speak of between summer and winter, then followed the excessive cold of winter, 48 degrees below zero on the main land and 46 below at this station, and for days in succession 30 below zero. This, no doubt, weakened the vitality of the trees, but with the exception of the tips of last season's growth I could see nothing the matter when they got their annual pruning between April 12 and 20.

"The first week in May was excessively hot in the day with hard frost at night, which is the principal cause of failure in fruit growing in the north. The trees leafed out all right with the exception of a few cherries, but just as soon as the sap in the top of the tree was exhausted the tree began to die. There was no root killing, although the snow at no time was very deep. Most of the trees were killed to the snow line and are making new growth a foot above the ground. They may in a few years make better trees than they were originally. Six feet of clear trunk is not the thing for trees in this section, three feet is quite high enough. If I had taken my usual precaution and protected the trunks of the trees from the sun I have no doubt most of them would have come out all right, but this I omitted in the fall."

"As to what varieties have suffered most: This has puzzled me, for varieties that had been considered hardy, for instance, Talman, Golden Russet and Ben Davis, are nearly all killed. I have lost no trees planted six years ago except two Wagners. Among pears, Keiffers, which bore some fruit last year, were killed to within a foot of the ground. Anjou, which I had not considered extra hardy, was uninjured and came out better than even Flemish Beauty. A few sweet cherries I had are dead, others are gradually dying."

Although in my 81st year, I am spending a good deal of my time tramping in the snow and cold soliciting renewals and new subscriptions for The Canadian Horticulturist.—(Jos. Barker, Secretary Kincardine Horticultural Society.

I find something to help me in every issue of The Horticulturist, though the reason I began taking it was for the information it gave about growing flowers. The magazine is getting better all the time.—(Mrs. Geo. Mutton, Penrym.

SPRAYING AGAINST THE BLACK ROT

W. H. BUNTING, ST. CATHARINES.

I HAVE noted with considerable interest the timely articles in The Horticulturist on black rot of the grape, more especially those from Mr. W. T. Macoun, of the Central Experimental Farm, and Prof. Lochhead, of the Ontario Agricultural College, both of whom have been taking a lively interest in the work of the fruit growers of Ontario. As my vineyards have been incidentally mentioned in these articles, I have thought that I might add a word or two emphasizing the conclusions arrived at.

Spraying on the Farm of Alex. Heazlitt, Adolphustown, Lennox County, Ont.

The grape industry, which has reached large proportions, and become a most important interest, is threatened with a serious danger unless prompt measures are taken to check the inroads of this fungus disease. I have had evidence of the presence of the rot for several years amongst the Rogers varieties on sandy soil, and have been spraying to some extent, but with indifferent success, because the work was done in a spasmodic way, and usually not taken up until after the damage to the fruit became more or less evident. It was not until 1901 that symptoms of this disease were seen on the Niagara grape, but during that year it suddenly appeared when the fruit had attained nearly full size but had not commenced to ripen. An application of Bordeaux mixture seemed to check it. There also appeared that year what has become commonly known as petrified grapes. The berry, instead of ripening in the ordinary way, became solid and opaque, assumed a dull grey or greenish white appearance, and finally dropped to the ground.

In 1903, owing to peculiarly favorable atmospheric conditions, black rot spread so rapidly, not only over the Niagara grapes, but also affected nearly all other varieties and was in evidence in so many vineyards it became apparent that a vigorous campaign must be commenced. Conflicting reports were received of failure or success in combatting the disease. In some sections the growers pulled out their vineyards and turned their attention to other crops. Others, by persistent effort, succeeded in controlling the disease and reaped fair crops. I resolved on making a determined effort to fight the rot during 1904.

The vineyard most seriously affected was sprayed seven times; four with the Bordeaux mixture (4-4-40 formula), twice with the soda Bordeaux, using sufficient caustic soda to neutralize the acidity of the copper solution, and once with a dust spray composed of about 30 pounds of lime, 15 pounds of sulphuric acid and two pounds of sulphate of copper, in a finely powdered condition, well mixed and applied with a Jumbo dust sprayer. Although 1904 was favorable for the spread of fungus there was comparatively little rot in the vineyard of about five acres, and no petrified fruit, and I succeeded in harvesting one of the most satisfactory crops of grapes this vineyard has produced for many years. In 1903 nearly 75 per cent. of the crops had been destroyed by rot.

In other vineyards where less spraying was done there was more or less evidence of rot even where it had not previously appeared, while in many surrounding vineyards, where no spraying was done, the crop was absolutely worthless. I am satisfied that frequent and systematic spraying with the Bordeaux mixture will result in freedom from rot and disease, in producing bright, healthy foliage and in the proper maturing of a fine crop of fruit under ordinary conditions.

STRAWBERRY CULTURE

E. B. STEVENSON, PONSONBY, ONT.

THE past season has emphasized the superiority of the narrow row system of strawberry cultivation, with soil well prepared. The question is often asked, "What is the best soil for strawberries?" They may be grown on any land that will produce a good crop of corn, potatoes, or turnips; ground that has been well manured for roots the year previous is perhaps the best.

There is nothing more important in successful strawberry growing than a careful preparation of the soil. There is no fruit that is more unsatisfactory and more unprofitable when neglected, and none that will more readily respond to good care. Only those who have had experience can be made to believe what can be taken off an acre of strawberries. The up-to-date grower, who gives strawberries suitable ground and proper cultivation, will clear, one year with another, $225 to $250 per acre.

Strawberries should not be planted on newly plowed sod land, nor on ground on which the water stands after rain or through the winter. On sod land a great many white grubs are often found, which will make havoc amongst newly set strawberry plants. I have seen the white grub clean off the plants from a two-acre field that had been planted on sod land.

The best results will be obtained from rows three or three and one-half feet apart, plants the same distance in the row, cultivated both ways for a time, then, when plants are running well, cultivate one way. Keep the rows of plants narrow—about 18 inches—leaving a good path for the pickers. In the fall, after growth has stopped, give a dressing of unleached ashes and a slight covering of long strawy manure, or pea straw. In the spring this should be raked into the paths, and will act as a mulch and keep the berries clean. If the ground has been kept well cultivated and clear of weeds the previous summer it will need very little in the spring.

Last season was unfavorable. Owing to the severity of the winter the plants suffered very much, some plantations losing one-third. The plants made a good growth and went into winter quarters in good condition, and where they had a good covering of snow or straw came out all right. Where not covered the very severe freezing of February did the damage, but wherever they were well mulched the plants came through the winter in good condition. The experience of the past season emphasizes the great importance of a good heavy mulch, especially where the plants are thin in the row. This prevents the great damage that results from heavy freezing, or alternate freezing and thawing. The season vas later than usual and prices ruled higher on account of a light crop.

CONCERNING VARIETIES.

As to the best varieties each grower will have, in a large measure, to decide for himself which are best suited for his soil and style of cultivation. In some places Michels is the best early, in others it gives a very good return. The first to ripen last season were Excelsior, Michels, Van Deman, August Luther, Camelon, Success, Early Market, but not very much ahead of the bulk of the mid-season varieties. Gandy, Nettie, Hunn, Robbie, Buster and Irene were among the last picked.

Among the good varieties Monitor did well. It is an early variety. There were only one or two pickings of the earliest varieties before the mediums, viz., Clyde, Monitor and Splendid, were ready; then Bubach, Tennessee Prolific, Williams, followed by Glen Mary, Sample Atoma, Gandy, Joe, Nettie.

Of the new varieties, fruiting for the first time with me, Success, President, Fairfield and Ben Davis did the best. Success is early and makes small plants, but is a good runner and the berries medium in size. I have a new strawberry named The Cardinal. It is claimed to be the long looked for "perfect" berry. The plants are clean and bright, vigorous and strong, large and healthy, no trace of rust on any of them. When it fruits next season, if the berry proves to be as good as the plant, it may turn out to be what its originator claims, viz., perfect. I hope it may have a favorable season in which to make its first appearance in Canada.

Berry Bushes in the Orchard

MR. A. PETTIT, of Grimsby, was one of the fortunate fruit growers who did not lose many peach trees by the severe weather of the winter of 1904. He attributes this largely to the fact that he has berry bushes planted in alternate rows in his peach orchard. The bushes, he claims, help to hold the snow and break the sweep of the wind. "Where the bushes were planted," said Mr. Pettit to a representative of The Horticulturist, "I only lost three or four trees. In another orchard where there were no bushes I lost about 200 trees. The location of the two orchards was practically the same. I have been unable to account for it in any other way."

"How would mulching with straw, or the use of a cover crop, affect the trees," was asked Mr. Pettit. "Anything that will hold snow and protect the roots," he replied, "would be of value, but I doubt if it would be practicable in a large orchard."

Dry Sulphur for the Rot

"LAST year was my first experience with the black rot in grapes," said Mr. R. H. Lewis, of Hamilton, to The Horticulturist recently. "I never had anything serious the matter with my grapes before. My impression is that growers will have to spray thoroughly and at the proper time if they are to prevent the rot seriously injuring their crops. I used dry sulphur last season, which I applied twice, but with no result. This may have been due to the fact that I did not apply it soon enough, although I do not believe sulphur is the remedy.

"The Bordeaux mixture, I think, is the best to use. This year I intend to apply a copper solution before the buds start and to follow it with two or three applications of the Bordeaux mixture. One application put on thoroughly is worth half a dozen put on poorly. I am using a power sprayer and have obtained excellent results."

DISEASES OF THE GRAPE *

W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA.

THE brown rot, downy mildew, gray rot, is the rot which up to recent years proved most injurious in Ontario. The general appearance of this rot as it affects the fruit has already been noticed. Like the black rot, it affects leaves, stems, and fruit. The disease causes slightly depressed patches on the shoots, somewhat like anthracnose, but they are not so deep. The stems, however, are not usually badly affected, but it is the leaves and fruit which suffer most. Unlike the black rot, in the case of brown rot once an infection takes place the disease spreads through the tissues of the vine.

When the leaves are affected they turn pale where the disease has been at work, and about this time the under part of the affected leaf becomes downy, indicating the presence of spores and presenting the downy mildew stage of the disease. After this the affected parts of the leaves turn brown. The diseased condition of the fruit is indicated by a brown patch which gradually spreads over the whole grape, which gradually withers. The absence of black pustules readily distinguish this at this stage from the black rot. Sometimes, after the fruit has withered, it becomes covered with a white powdery substance indicating the spores, but these do not always develop, much depending on healthy conditions. Spray with Bordeaux mixture just before blossoming, after fruit has set, and 10 to 14 days later.

POWDERY MILDEW *(Uncinula spiralis).*

This disease does not penetrate into the tissue of the plant as the black and brown rot, but grows upon the surface, making it much easier to treat. Unlike these diseases also, it spreads more rapidly in rather dry weather. The mildew grows on the young shoots and under surface of the leaves and on the fruit, giving them a grayish, powdery appearance easily recognized as being caused by the powdery mildew. This disease feeds on the plant by sending small suckers into the plant cells from which it gets food. Spores are produced early in the season and these being scattered about soon infect other leaves or vines and spread the disease.

A second crop of spores are produced later in the summer and these carry the disease over the winter. These are enclosed in a hard, roundish case which becomes black during the latter part of the season. This is a very easy disease to treat and yields readily to fungicides. Dry sulphur and sulphur and water have been found effective, but as this disease often accompanies other diseases of the grape the sprayings with Bordeaux mixture recommended for black and brown rot are preferable and will effectually check it.

A disease noticed in the vineyards at Winona, Ont., is undoubtedly this species. It causes a withering of the leaves somewhat like the brown rot, but the fruit is not affected nor has the under surface of the leaf the downy appearance of the brown rot. The leaves on the vines at Winona had the burnt appearance which is peculiar to many

The patches on the leaves indicating the disease are large and irregular in outline. The patches become quite dry and will break from the leaf very readily. The spores are borne on the under surface of the leaf on slender filaments and are produced in large numbers during damp weather. This disease lives over the winter in the fallen leaves. It has not received much attention, but it weakens the vines and prevents the full development of the fruit. Spraying the vines, as for black rot, should prove quite effectual.

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* Extract from an address delivered at the last annual convention of the Ontario Fruit Growers' Association. The first portion of this address will be found in the January issue.

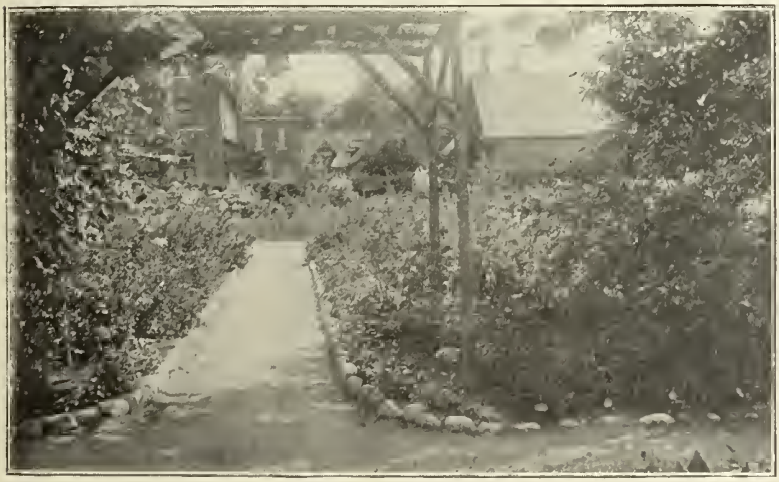
GRAPE PRUNING

"GRAPE pruning should be done in March after the severe weather is over and before vegetation begins so that they will not bleed too profusely," said Mr. A. W. Peart, of Burlington. "I prune on the renewal spur system, a combination of the two systems in common use. I aim to get rid of the old wood, only retaining a certain amount of it to ensure having fruit.

"Grape vines will bear the third year, but it is wiser not to allow them to do so until the fourth. If you want grapes you must have a supply of young wood formed the previous year. This wood throws out shoots in the spring and on these shoots the fruit is formed."

THE HOME OF A HORTICULTURAL ENTHUSIAST

FEW people living in cities, who have a small amount of land around their homes, have any conception of the pleasure and profit they may derive from their ground with proper care and the necessary amount of enthusiasm. Any such who could visit the home of Mr. R. B. Whyte, of Ottawa, during the summer months, would be amazed and encouraged by what they saw. This pleasure fell to the lot of an editorial representative of The Horticulturist last summer who wishes many more of Canada's amateur florists could have the same experience.



How the Walks in Mr. Whyte's Gard.n Are Laid Out

This cut shows how well adapted the boulder border is for rounding corners and for curves. The arbor is a new one and will be covered with climbing roses.

Although a very busy man, having control of the large wholesale business conducted in Ottawa under the firm name of J. G. Whyte & Sons, Mr. Whyte for many years has succeeded in making his home a bower of beauty. Not only has he surrounded himself and family with much that is beautiful in the line of flowers, but he has succeeded in producing from the little plot of land around his home many delicacies in the line of tender vegetables and fruits. All this has been accomplished by Mr. Whyte through a few hours' work each morning before he leaves for the office. "I do not," said Mr. Whyte, "do any work to speak of in my garden in the evening. I like to keep that time to look around and enjoy it."

The land at Mr. White's disposal is 200 feet by 173 feet, from which must be deducted the space occupied by his house; a most comfortable, home-like structure. Of the remaining ground there is not an inch that is not used to the best advantage. There is a lawn and tennis court, occupying 110 by 50 feet, and, with the exception of a small piece of land at the back of the house which is devoted to the raising of vegetables, the rest of the ground, about half an acre in extent, is given over to the production of flowers and fruit. As a result of years of experience Mr. Whyte has discovered the best varieties of flowers to grow to ensure continual bloom from spring until late in the autumn.

A Lovely Section in Mr. Whyte's Garden

This view is near the entrance from the street. In the foreground is a canna bed bordered with tuberous begonias. The tree is an Ostheim cherry. In the distance is the street fence covered with Virginia creeper.

The following partial list of flowers in bloom during the different months will give some conception of the beauty of this garden:

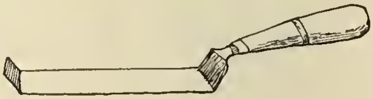
May—Narcissus, over 75 varieties; tulips, over 100 varieties.

June—Paeonies, 30 kinds; lilies, 30 kinds, lasting all season; German iris, 40 kinds.

July—Spiraeas, 15 varieties; Japanese iris, 35 varieties.

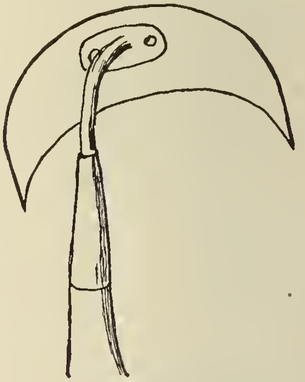
August and September—Gladioli, between 4,000 and 5,000 bulbs; phlox, 70 varieties, and over 70 kinds of herbaceous perennials.

In addition to the flowers Mr. Whyte finds time to grow 25 kinds of grapes, 15 of apples, 10 of currants, 32 of gooseberries, and the Herbert raspberry.



A Hand Weeder

On entering Mr. Whyte's grounds, after the beauty of the general effect has been noted, attention is soon drawn to the neatness of the walks which reach to all parts of the garden. After trying numerous experiments Mr. Whyte believes he has discovered a walk that is free from the weak points of most garden paths. "In making my paths," said Mr. Whyte, "I excavate the earth 3½ feet wide and 15 inches deep. The trench is filled in with unsifted coal ashes about 14 inches deep. This is then well rolled with a garden roller, then a layer of sifted ashes, rolled again and covered with about an inch of sandy earth, which, when rolled hard, makes a very pleasant path to walk upon, dry, free from grittiness, and easily kept clean. They are lined on both sides with small rounded boulders,



A Crescent Hoe

which I think make a very attractive and permanent border."

A GREAT DIFFICULTY.

"The greatest difficulty many amateur flower growers have with their gardens," continued Mr. Whyte, "is to decide how to arrange their perennials and their annuals so as to ensure a constant succession of bloom. It is not good gardening to have a bare spot in the garden at any time. I have succeeded in overcoming this difficulty fairly well. Some advise using nothing but perennials, but I prefer to mix my annuals among my perennials to keep up the bloom.

One of the Paths and Arbors in Mr. Whyte's Garden.

This cut shows one of the long paths. The arbor is made of cedar poles and is covered with grape vines. In the foreground is a white phlox.

"Visitors to my garden sometimes remark, 'What a lot of work it must be to look after so many flowers.' My reply is that if it was work I would not undertake it, but as it is a pleasure I enjoy it and wish I could do more. I manage to do the bulk of the digging, but in the spring I have to secure a little help to get things ready in time for planting. During the summer the only assistance I require is to cut the grass, as that is a job I do not attempt.

"I use two hand implements, which are a great help in the care of the garden; in fact, I would not know what to do without them. In cleaning the paths and working among the plants I use a Dutch hoe. An improved form, the crescent hoe, does even better work, as it cuts both ways. With it I can cover a large surface of ground with small effort. The smaller tool is of great assistance for weeding purposes, as with it the weeds can be removed from around the plants without injuring them, and at the same time the soil is stirred up. Much more work can be done with this little implement than with the hands, and the annoyance of soiling the hands is avoided.

"Long ago I found that if I was to succeed with my garden a vigorous fight must be maintained against weeds. This fight has to be continued all season, but is the most exacting during June and July. If the weeds are kept under control during these months they do not cause much trouble during the remainder of the season.

"Every year I like to experiment with different varieties of fruits and flowers, and in this way succeed in finding many that are specially well adapted to eastern Ontario."

"How do you manage to maintain the fertility of your garden?" Mr. Whyte was asked.

"My stable yields about 25 cart loads of manure a year, and I buy about 10 more," replied Mr. Whyte. "I also use wood ashes, but find it difficult to secure enough. Every second year I obtain about 25 bushels of ashes. The greater part of the fertilizers are used for the small fruits and the perennial border. The vegetable garden is given what is raked off the perennial border, which I have found sufficient."

During the 35 years Mr. Whyte has been interested in gardening he has become recognized as an authority in several lines of horticultural work. Largely through his efforts the Ottawa Horticultural Society was started 12 years ago and Mr. Whyte has been on the board of directors ever since. This society is recognized as one of the best in Ontario. Every month, during the summer and fall, the society holds exhibitions, at which Mr. Whyte has always been a successful exhibitor, winning a large proportion of the prizes. In the growing of poppies, gladioli and perennials he has been particularly successful. Gooseberries grown by him have been used by the Dominion government for exhibition purposes in foreign countries. In a later issue some of Mr. Whyte's methods of growing small fruits and vegetables will be described.

Any amateur horticulturist who can manage to visit Mr. Whyte's garden will receive a cordial welcome. During the 35 years he has been engaged in amateur gardening his love of the beauties of nature, as they may be found by diligent search in any city garden, has become so intensified that visitors invariably come away with fresh conceptions of the possibilities of gardening even if only on a small scale.

PLANT IMPROVEMENT BY HYBRIDIZATION*

H. H. GROFF, SIMCOE, ONT.

At the meeting of your association at St. Louis I presented a brief address on the general advantages to be gained by breeding from tame versus wild species.

In presenting these views I took it for granted that the actual possibility of creating domestic species by hybridization had been generally admitted.

The Darwinian theory, as to the natural creation of species, is none the less true, but that such theory was intended to be accepted as an inseparable barrier to the results of scientific effort, could never have been thought of. It stated what we know to be perfectly true in nature—that the creation of wild species requires ages of time. But as I have recently expressed it, " The unfettered mind of man has bridged the ages, and in hastening evolution by hybridization, has rushed into the eons of the future and laid their treasures at our feet."

It would not be possible in a paper like this to detail the many features of this important aspect, resulting in my experience from my recognition of domestic species among my advanced creations, during years of constant and critical observation in the field, from several hundred thousand new seedlings of the gladiolus, as such detail is capable of limitless elaboration as to its actual and possible application in scientific and economic plant breeding.

I confess to a feeling of helplessness at the immensity of the field, for practical and useful results, arising from my limited application of the system of plant breeding.

The practical and general application of my system may be outlined as follows: In order to secure the benefits of existing material, make crosses between every available type, regardless of apparent objectionable characteristics. Select sires from these and use on every wild species obtainable, on special and general lines, crossing and recrossing until desirable types are produced, then bring the selected offspring of all wild species together in intercrossing on special lines, as each wild species will prove more useful than another in some individual feature valued by us, for as already indicated specialization becomes imperative. The result of the foregoing will be the creation of new domestic specific types, valuable as sires for use in revitalizing crosses on existing varieties of merit, and the production of new forms and types of unexpected quality and value.

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* Address before American Breeders' Association, Campaign, Ill., February, 1905.

Selections of varieties and raising naturally fertilized seedlings from such selections, is only a short step towards an infinitesimal fraction of the possible satisfaction open to all plant breeders, who must be considered as advancing, more or less slowly, toward the ever rising—but never to be fully risen—sun, of scientific horticultural achievement.

Mephrolepis Piersoni, as Grown by J. Gammage & Sons.

The first step should be hybridization or cross-breeding between such selected varieties—irrespective of color or race—to the limit of variation and stability; with a contemporaneous systematic effort to develop domestic specific types from every obtainable wild species by using pollen from these advanced selections. These efforts should be conducted on many lines, with the hope of rendering the possibilities of each species controllable for the definite use planned by the operator.

For example: If the desire is to produce a white section every effort should be made to originate such colors and shades from every known wild species, without regard to their colors. When fixed types of a desirable character have been so produced these should be used as sires on selections from existing varieties as mothers for the creation of new and valuable economic types.

While the foregoing operation is progressing for the production of commercial types, crosses should be made between all of these sires on individuals prepared for use as mothers by removal of the anthers before ripening of the pollen, with the object of creating new and distinct domestic specific types to be used as the progenitors of new forms and races, as well as for the revitalization of strains possessing valuable characteristics worthy of perpetuation and elaboration. The results to be obtained from blending vital forces that have been isolated for ages in the natural production of wild species gives unbounded satisfaction, and the pleasant surprises are only limited by the activity of the worker.

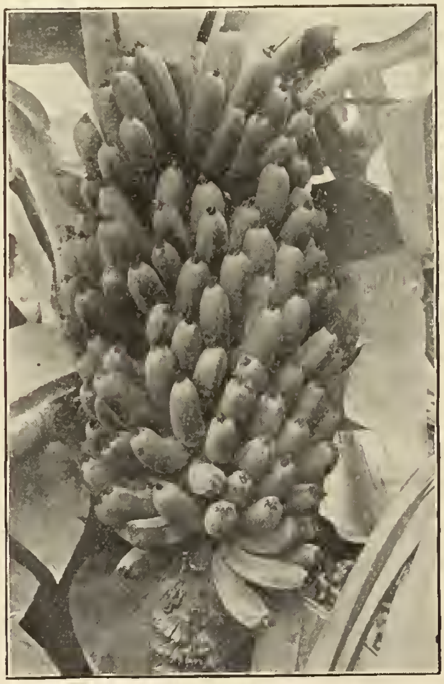
In my work on the gladiolus some of the most beautiful red shades came from crosses between light types that had been revitalized by a dash of choice red blood from new species. The effect of working through the light section added most materially to the substance of the flower. My highest satisfaction, however, is from a series of new forms with large, round, cup-shaped flowers, like the tulip or nymphea. Many of these are self colors ranging from pure white to lilac and pink, with intermediate shades of the most delicate shell pink and flesh tints.

Multiplicity of the floral pieces, as in semi-doubles, is now quite frequent. Infusions of such blood induces twinning from the seed so produced, a point that proved most interesting to Professor Bateson, of England, at the International Plant Breeders' Conference, New York, 1902. Valuable and interesting variations like the above are among the side-lines of limitless possibility yearly made apparent to the ardent worker, and selections made by me from over a half million of my new creations give promise of endless satisfaction, as well as increased opportunities for greater and more rapid progress in the future.

BANANA GROWING AT THE GUELPH COLLEGE

WM. HUNT, O. A. C.

A FINE bunch of bananas has been grown and matured in the greenhouses of the Ontario Agricultural College, Guelph. The bunch weighed 60 pounds at the time of cutting, January 11, and there were 180 bananas in all on it, or to use a commercial phrase, 10 hands of fruit, averaging 18 fingers or bananas to the hand. In point of size it compared very favorably with the large bunches seen in fruit stores, grown in the West Indies or tropical America, although it is not of the same variety usually grown there commercially.



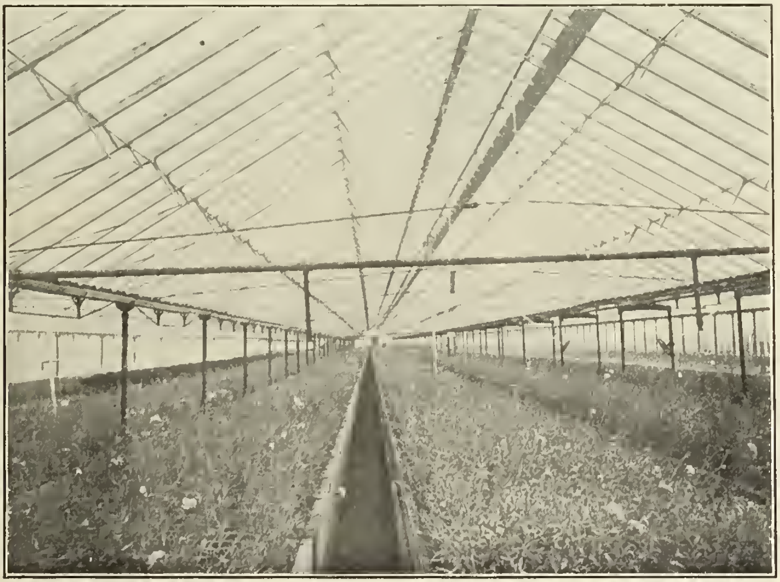
Canadian Grown Bananas

The variety grown at the college is Musa Cavendishii, or Chinese banana, being a native of the warmer parts of China, and is better adapted for greenhouse culture than the African or tree banana. The stem of Musa Cavendishii, from the base to the crown, where the bunch of fruit makes its appearance, is seldom over five feet in height. The bunch is produced from the centre of the stem, at the base of the stalks of its immense leaves. A small portion of some of the leaves can be seen in the illustration. Some of them were over three feet in width at the broadest point and over five feet in length, giving the tree a majestic tropical appearance. The stem commenced its growth in June, 1903, from the ground, so that it has taken about 20 months to grow and mature its fruit. After fruiting the stem is cut down, as it commences to decay at once, and a young tree or sucker is allowed to take its place. Usually the root produces a number of these suckers, but in greenhouse culture only one is allowed to remain, the rest being cut away when quite young.

The Chinese banana tree produces a shorter and broader bunch of fruit than the West India or tree banana. The individual fruit is also shorter and thicker than the African and West India type. As to its quality, the general verdict of the students and others of the college and Macdonald institute, among whom the bunch was distributed, was that the quality was even better and richer in flavor than those usually purchased in fruit stores. This probably arises from the fact that the bunch in question was allowed to reach its full growth before being cut from the tree, while those sold in stores have of necessity to be cut too early, and before the bunch has reached its full size, owing to the time occupied in reaching the point of consumption. The best time to cut greenhouse grown bananas is as soon as any of the fruit shows signs of coloring. Cut at this time and hung in a warm room they ripen splendidly in 10 or 12 days.

WHERE FLOWERS BLOOM IN WINTER

A FLORAL enterprise Canada has cause to be proud of is that conducted by Messrs. J. Gammage & Sons, of London, Ont. An idea of the extent of the business they control may be gained when it is stated there are over 100,000 feet of glass in their conservatories. Their grounds occupy over 13 acres, a large portion of which is used as a trial ground and nurseries. It was the pleasant experience of an editorial representative of The Canadian Horticulturist to be shown over their immense establishment during February by Mr. Wm. Gammage, who is now the head of the firm. So perfectly was the temperature in the greenhouses under control it seemed like summer although the thermometer outside stood at 10 degrees below zero and a blizzard was blowing. This impression was heightened by the lovely odor, of which the air was full, from spring flowers, such as narcissi, hyacinths, lily of the valley and tulips. This big business has been developed since 1880 by Mr. J. Gammage and his two sons, and is the result of hard work and constant, careful attention to details.



Interior View of One of the Mammoth Modern Greenhouses

The first conservatory entered had thousands of young palms about 12 inches high.

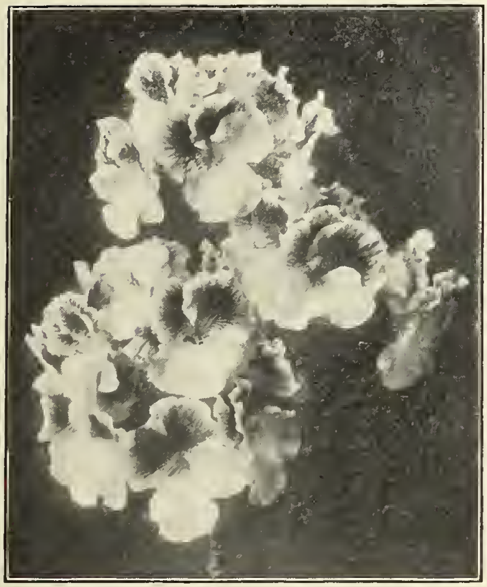
On being asked where the firm obtained such healthy stock Mr. Gammage replied that they were secured from seed grown by themselves. Their firm is the only one in Canada which grows this seed to any extent. They also grow all their own rubber plants, which are obtained by a process known as moosing. This consists in cutting the stem of the plant about half way through, inserting a small piece of wood in the cut, to prevent it growing together, wrapping about two handsfull of sphagnum moss around the wound and binding it on tightly. By keeping the moss constantly moist it causes the plant to throw out new roots. After sufficient of these are formed the new plant is placed in a pot of soil. It usually makes a much stronger growth than those started by other means.

The second greenhouse visited was filled with primula obconica, such as it had never been the fortune of the representative of The Horticulturist to see before. Such trusses of bloom and healthy foliage are very rare. Over 25,000 of these are distributed every year by this firm to all parts of Canada. In another house were some of that very best of house fern, the asparagus plumosus, of which Gammage & Sons grow over 30,000 plants.

On entering the house where the stock plants of chrysanthemums are kept the first thing noticed was the fact that all the plants were in the bench, not standing under them in boxes as is usually the case. The result is that the cuttings taken from the plants are very sturdy and free from disease. The firm usually sends out over 100,000 chrysanthemum cuttings every season. Not content with having all the very best standard varieties they send to England every year for the latest new kinds. They find it quite unnecessary to go to the United States for stock. One can hardly grasp the extent of their chrysanthemum business until told that they ship over 30,000 blooms every season. They have customers from Halifax to Vancouver, to whom they are continually shipping. The extent of their trade can be understood best when looking over their orders for bulbs to arrive next fall, where such items appear as 12,500 tulips, 50,000 hyacinths, 50,000 narcissus, 60,000 lily of the valley, besides thousands of other bulbs, such as Dutch and Roman hyacinths, lilies, crocus, azaleas, etc., which they import direct from the growers.

A Section of Messrs. J. Gammage & Son's Trial Grounds

Being asked his experience with the Bermuda lily Mr. Gammage replied that there is not nearly as much disease in Bermuda bulbs as formerly, but he considered the Japan Lily (lilium longiflorum) much the better bulbs. The lilies which are being forced for Easter are in splendid condition. At that season they usually dispose of 5,000 plants.



Seedling Pelargonium, Fred Mitchell

The rose houses were found to be in excellent condition. Three beds of American Beauties looked splendidly and will be in full bloom at Easter. They also have some splendid Brides and Bridesmaids roses. Meteor and Liberty roses not being of the best, will be discarded, and General McArthur, a new red rose shown for the first time in Canada last season, will be grown in their place.

A new range of three houses 450 feet long by 21 feet wide, is devoted almost entirely to carnations. Many of the leading varieties are grown to perfection. One bench of Enchantress was particularly good. The men working in the greenhouse were making carnation cuttings, of which over 100,000 are required to fill the orders received each season. Among the many new varieties grown is the White Lawson, which has proved to be as good as the original, Mrs. F. W. Lawson. Another specialty of Messrs. Gammage & Sons is pelargoniums. They recently purchased the entire stock of standard varieties and novelties from Mr. F. Mitchell, of Innerkip, who is now in charge of this department. Mr. Mitchell has devoted a great deal of attention to hybridizing the pelargonium. That his efforts have been crowned with success is demonstrated by the fine collection in the catalogue. Among the many good varieties is one named after Mr. Mitchell, an illustration of which appears in this issue. The color is a white ground shaded to a dark blotch at the top.

Messrs. Gammage & Sons have become well known to many horticultural societies by filling orders for goods. They supply several societies, as far east as Smith's Falls, and the fact of their selling herbaceous, as well as bedding out plants and bulbs, makes them a favorite. A special discount is allowed to societies.

The firm uses annually over one carload of pots in their greenhouses. They claim to be the largest general florists in Canada. On the trial ground and nurseries are grown large quantities of cannas, hardy phlox, peonies and hardy chrysanthemums, besides many perennials, which are becoming more popular for growing in gardens. This part of their trade is being developed. In the wholesale catalogue for 1905 are listed many of the most popular varieties of fern, including some very fine Piersoni, of which an engraving is shown.

Every part of Messrs. Gammage's establishment is constructed and worked on up-to-date methods. All the buildings and branches are connected by telephone. In the retail store most of the local orders for flowers are filled. The firm does most of the floral decorating in the vicinity.

At the recent Fruit, Flower and Honey Show in Toronto Messrs. Gammage captured many of the best prizes, including first prize and challenge cup for the best 12 varieties of chrysanthemums, first prize for the best 25 varieties, first prize for the best 12 of one variety, first prize for the best six crimson varieties, and many other prizes for chrysanthemums and roses. They took prizes on everything they exhibited.

A PROVINCIAL VEGETABLE GROWERS' ASSOCIATION

AT a well attended meeting of the vegetable growers living in the vicinity of Toronto and Hamilton, held in Toronto early in February, it was decided to form a provincial vegetable growers' association, similar to the Ontario Fruit Growers' Association. The following committee was appointed to draft a constitution and arrange for organization: Messrs. W. Carter, Dover Court Road; George Syme, jr., Carlton West; John McKay, Norway West, and R. Larkin, Todmorden, representing the Market Gardeners' Protective Association; W. C. Emery, of Aldershot; R. H. Lewis, A. E. Bates and E. J. Mahoney, of Hamilton, representing the Hamilton Tomato Growers' Association, and H. B. Cowan, of Toronto, editor of The Horticulturist.

The meeting was presided over by Mr. J. D. Evans, president of the Market Gardeners' Protective Association, who explained the objects of that association. It was organized a number of years ago to try and secure more protection for their industry. A statement of the duties imposed by Canada and the United States on garden produce had been prepared and a delegation had paid two visits to Ottawa to urge their views on the government. They had received assistance from the Montreal and Ottawa gardeners, but had not secured what they desired. Had Mr. Tarte remained in the government, he believed they would have accomplished something, as Mr. Tarte had shown himself much interested.

Mr. C. C. James, Deputy Minister of Agriculture, said the department had been trying to get in touch with the market gardeners. The department had nothing to do with the question of protection, as its work was educational. Were the vegetable growers to organize the department would be only too glad to cooperate and to assist the organization in every way possible. The market gardeners have been doing fairly well, but they might do better if still more intelligent methods were employed in their work.

The importance of the vegetable interests was shown by Mr. Cowan, of Toronto, who stated he understood some $3,000,000 is invested in the industry in and about Toronto alone. There are 30 or 40 sections in the province where vegetables are grown extensively for canning. The market gardeners should have a provincial association, just as the florists, both professional and amateur, and the fruit growers have. The recent Fruit, Flower and Honey Show was a result of this organization, and it had been most successful. The various associations receive grants from the government, and the market gardeners might were they to organize and show good reason why they should be assisted. An annual convention should be held, which would result in much benefit. Their work should be principally educational. They should have an official organ, such as the other associations had. He outlined a plan of organization.

Mr. E. J. Mahoney, of Hamilton, expressed his approval of the views set forth by Mr. Cowan. The Hamilton tomato growers have had an organization for three years, and their position is much better in consequence. He offered some suggestions as to organization and submitted the Hamilton form of petition for increased protection. The tariff on market garden produce proposed was much the same as that in force in the United States. They did not wish to prevent goods coming in which they did not grow, but they wished to avoid injurious competition. They did not want ad valorem but specific duties.

Mr. R. H. Lewis, Hamilton, advocated a committee to work out the details of organization and report at a subsequent meeting.

Mr. J. W. Rush, Mimico, related how their little local association had accomplished a good deal, instancing a reduction in the price of many of their seeds. He put in a word for The Canadian Horticulturist and asked how many of the market gardeners were subscribers.

Mr. A. E. Bates, Hamilton, emphasized the benefit the tomato growers' association had been, and said steps had been taken to extend over the province. They had been supplying four canning factories with about 200,000 bushels. As to protection, he had at one time sent celery to Toronto, for which he got 70 to 75 cents a dozen, but had been driven from the market by the Michigan growers, who sold it at 30 cents.

After some further discussion it was unanimously agreed to form a Provincial Market Gardeners' Association, the plan of organization to be arranged by the committee already mentioned. The gathering was an enthusiastic one. It was generally felt that a provincial association will be of great value to the growers. A meeting of the special committee will be held Wednesday afternoon, March 1, after which a mass meeting of vegetable growers that will be representative of the province will probably be arranged for.

FERTILIZERS FOR EARLY TOMATOES

W. W. HILLBORN, FRUIT EXPERIMENT STATION, LEAMINGTON, ONT.

I HAVE every confidence in chemicals as fertilizers for early tomatoes. We are, however, paying too much for the ready mixed article, which we cannot always get in the right proportions. I have had the best results from buying the chemicals separate, but have experienced considerable difficulty in pulverizing nitrate of soda, muriate of potash, etc. I am building a cheap machine to grind such material, and will run it with a two-horse power gasoline engine that I bought for pumping water. I shall use a large quantity of nitrate of soda, muriate of potash, sulphate of potash, kainit, dissolved bone, and acid phosphate, and shall make a number of experiments and hope to get some information that I have not been able to find in literature on the subject. One of the important problems to be solved is the right mixture to produce the best crop of early tomatoes. Nearly all the ready mixed fertilizers contain too much nitrogen and not enough phosphoric acid and potash. On this account the first blossoms do not set but drop of.

Mr. J. L. Hilborn's Cucumber House, 20 x 206 Feet, Essex County.

Weather conditions must be taken into account. With a cold, wet spring as much nitrogen cannot safely be used as when the conditions are more favorable. I want to get at the right mixture for an unfavorable spring, for we are never sure of the weather until after the fertilizer is in the soil.

Plow barnyard manure under to form humus as it needs darkness and moisture.

Early Cucumbers in a Cold Frame

W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA, ONT.

I have tried for several years with varying success to raise early cucumbers in a cold frame. The frame is permanent with about a foot of earth dug out except six inches near the sides. About two feet of leaves are tramped down each fall and covered with six or eight inches of earth, which is taken out annually. Lettuce is planted on this as early as possible, and in a five-sash frame five or six cucumber plants are set the beginning of June, often in full flower, from six-inch pots. White Spine seed is used and some manure is put in when they are planted, but I can never get fruit before the middle or end of July, when I always secure a good crop. I have tried planting earlier without lettuce and 20 or 30 plants; also pinching vines and artificial pollination of bloom, but have seldom succeeded, and the early planted ones were no more forwarded than the later. I tried keeping the sash on at night and putting it down for the day, but the results seem always about the same as the early blooms always drop. Could you kindly give me an idea as to the likely cause. I tried taking off the sash altogether the middle of June, as well as watering under the leaves so as not to wash the bloom. English cucumbers are ready the first, but are not generally liked.—(A. J. Collins, Listowel, Ont.

There are several probable causes of the cucumbers not setting well. In the first place it would seem as if the soil at time of planting cannot be in very good condition for the cucumber plants. There would be very little heat in the leaves in the frame by the time the cucumber plants were set out and after having watered for several weeks beforehand for lettuce, the soil is probably cold and possibly sour, conditions which are very unfavorable to cucumber plants. The plants are too far advanced when they are transplanted to the frame and thus receive a severe check.

Most of the first blooms are male flowers and hence would not be expected to set. The flowers of cucumbers are very sensitive to cold and if chilled by removing the sash in a cool time, or if chilled with cold water, would be likely to fall without setting fruit.

I should advise using about a foot of good fresh manure instead of the leaves for the lettuce, and sowing the cucumber seed among the lettuce. After the cucumber plants are in bloom, and when the days are warm remove the sash in the day time, as pollination will be better if this is done. Avoid using cold water.

Interior of Cucumber House After Plants Are Set

During March the vegetable growers in Essex county who force vegetables for the early markets start most of their work. One of the pioneers of this industry is Mr. J. L. Hilborn, of Leamington, in whose cucumber house the above view was secured.

In growing cucumbers for pickles it will generally pay to apply 50 or 60 tons of stable manure to the acre, as the yield varies from 150 to 500 bushels an acre.

Fertilizers for Tomatoes

JAMES TITTERINGTON, ST. CATHARINES, ONT.

FOR early tomatoes I use a fertilizer manufactured in the United States. The guaranteed analysis of it is four per cent. nitrogen, eight per cent. phosphoric acid, and seven per cent. potash. I have had very satisfactory results from its use.

I generally broadcast about 500 pounds to the acre, harrowing it well in. I also use about the same quantity when setting out the plants, putting a small handful in each hill, mixing it well with the soil. The plants are set four and a half feet apart each way. I try to get part of the plants out as early in May as the weather will permit, using round peach baskets to cover them on cool nights. I have always found that from the first set plants, even if small, we get our first ripe tomatoes.

Tomatoes and Cauliflower

"I SOW my tomato seed in hot beds about the last of March," said Mr. James Conboy, of North Dovercourt to a representative of The Horticulturist who visited his place. "As soon as all danger of frost is past I set the plants out in rows four feet apart and 30 inches apart in the row. To set them any farther apart is only wasting land. To grow tomatoes successfully it is not wise to make the land too rich, as they run too much to vines, and the fruit is scanty. The chief point to watch is continual cultivation to conserve moisture and keep down all weeds. The best commercial varieties here are Dominion Day and Atlantic Prize.

GROWING CAULIFLOWER.

"I grow good cauliflower because I have good soil and do plenty of cultivating. About May 24 I scatter the seed in rows about eight inches apart. Between July 1 and 12, on a cloudy day, I set the plants out in rows three feet apart and 20 inches apart in the row. In case I fail to get a dark day I give the young plants one good watering and then none only what Providence sends.

"Good soil, with a coat of ordinary stable manure, ensures a good crop of cauliflowers the first season, and the land is left in ideal condition for an onion crop the following spring. From my experience I conclude that a dark loam is most suitable for cauliflowers. The best paying varieties here are Gilt Edge and Early Selected Dwarf Erfult."

Tar in the Greenhouse

"THE lettuce in my brother's greenhouse," remarked Mr. G. Sime, of Carlton West, recently, "has died, and he thinks it is due to the fact that he put tar both on the inside and the outside of the boards used in the walls of the greenhouse. After the lettuce was planted it grew all right but died within two or three days. As there was nothing else unusual about the greenhouse it seemed probable that the odor from the tar was the cause of the trouble."

"That was it," broke in Mr. R. Larkin, of 599 Eastern avenue, who happened to be present, "I tarred the bottoms of the trenches in my greenhouse and it killed all my green stuff. Later on I took the trenches out and I had no trouble with my plants."

"I had tar paper in my celery house," said Mr. F. F. Reeves, of Humber Bay, "and it was possible to taste the tar in the celery. There was manure on the outside of the house, and I think it prevented the odor of the tar from escaping. I do not use tar paper now, having double boarded the celery house instead."

Good seed is essential to a good garden. Cheap seed may mean a little saving at the start, but its effect will be seen in the harvest. Beware of the cheap seedsman.

The Canadian Horticulturist

The Only Horticultural Magazine in the Dominion.

OFFICIAL ORGAN

ONTARIO FRUIT GROWERS' ASSOCIATION.
THE POMOLOGICAL AND FRUIT GROWING SOCIETY OF THE PROVINCE OF QUEBEC.
PRINCE EDWARD ISLAND FRUIT GROWERS' ASSOCIATION.

H. Bronson Cowan, Editor and Business Manager.
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8. **All Communications** should be addressed:

THE CANADIAN HORTICULTURIST,
TORONTO, CANADA

THE NEW MINISTER OF AGRICULTURE.

The appointment of Mr. Nelson Monteith, as Minister of Agriculture for Ontario, has been received with general satisfaction by those in close touch with the agricultural conditions of the province. As a graduate of the Ontario Agricultural College, a member and ex-president of the Experimental Union, and a regular attendant at the Winter Fair at Guelph, Mr. Monteith has been in close touch with many of the most important agricultural organizations in Ontario and in this respect is by far the best qualified member of the new government party for the important position to which he has been appointed.

Mr. Dryden is freely admitted to have been the most successful minister of agriculture Canada has ever seen. Some of the most complimentary remarks in regard to Mr. Dryden's fourteen years of administration have appeared recently in the Conservative press of Canada. Following such a man, every allowance will have to be made for Mr. Monteith until he has had opportunity to thoroughly acquaint himself with the many lines of work centered in his important office. Mr. Monteith is still a young man, he is thoroughly informed in regard to our agricultural conditions and is desirous of seeing his work developed along the best lines. There is, therefore, no reason apparent why he should not prove equally as successful as his predecessor in filling the important position of Minister of Agriculture of Ontario.

THE FRUIT DIVISION.

The British Columbia Fruit Growers' Association, at its annual convention in January, passed a resolution strongly opposing the proposal to place the Dominion Fruit Division under the control of the Dominion Dairy Commissioner. Seldom has the feeling of any class been as strongly, as quickly and as unanimously expressed as in this matter affecting the interests of the fruit growers of the Dominion. Provincial fruit growers' associations from Prince Edward Island to British Columbia have expressed their disapproval, in addition to which numerous small local associations, such as the Hamilton District Fruit Growers' and Gardeners' Association, have not hesitated to place themselves on record as opposing such a move. Fruit growers are proud of their industry and will not be slow to resent any action that even appears to reflect on its importance.

When it was recently announced that three new commissioners had been appointed by the Dominion Minister of Agriculture, one for live stock, one for dairying and one for seeds, fruit growers felt they had been overlooked. As the fruit division had not been united with the dairy division, fruit growers have been content to let the matter stand as it is, but within a year the Department at Ottawa may expect to receive a demand from the fruit growers of Canada that they shall be recognized by the appointment of a fruit commissioner.

FRUIT GROWERS VS. DEALERS.

At the Provincial Fruit, Flower and Honey Show last November the opinion was expressed by the fruit growers who made exhibits that at future shows it should be advertised that exhibitors would take orders for fruit. It was pointed out that if the citizens of Toronto once find they can secure high class fruit at the show many will make it a point to order their fruit each year direct from the growers. Such a privilege, it is believed, would be appreciated by the householders and would tend to greatly increase the number of exhibits at the show. Several exhibitors at the last show filled orders for fruit to be sent to all parts of Canada and the United States, and even to Mexico and Great Britain, the prices paid being very satisfactory. This feature should be developed.

The objection has been raised that if the fruit growers are allowed to take orders direct from consumers, the business of the commission dealers and even of the grocers in Toronto, is likely to be injured. This objection does not meet with much sympathy from the growers and is not likely to appeal to the citizens of Toronto. An attempt will be made next fall to bring the growers and consumers into closer touch in the manner indicated. It is possible this movement may have far reaching results.

SEVERAL APPLICANTS.

Three applicants for the $10 prize offered by The Canadian Horticulturist to the reader purchasing goods to the greatest value from advertisers in the January issue, were received during February. The successful winner was Mr. W. H. Bunting, of St. Catharines, whose purchases of fertilizers from S. W. Marchment, of Toronto, amounted to $97.27, and of pots from the Foster Pottery Co., of Hamilton, to $21.19, a total of $118.27. The two other applicants were Messrs. Charles Mackey, of Thornbury, who bought $114 worth of nursery stock from C. W. F. Carpenter, of Winona, and Mr. C. W. Webster, of Stoney Creek, who procured 760 trees and vines worth $47 from E. D. Smith, of Winona.

Having failed to win the $10 prize Messrs. Mackey and Webster are being sent special premiums offered by The Horticulturist to every reader who purchases goods from advertisers in the magazine and who inform the advertisers that they saw their advertisement in The Horticulturist. The money offer is open to horticultural societies who purchase from our advertisers. Readers should bear in mind that when they buy from our advertisers they are entitled to a special premium free and that they are helping to further improve The Horticulturist.

The demand of tomato growers for an advance in the price paid for tomatoes by the canners is a reasonable one. The cost of labor, fertilizers and everything used by the growers in the production of their crop has increased to the point where an advance in their returns is a necessity. While the canners might be forced to ask the consumers more for their goods the difference in price by the can would be so slight it would not materially affect the demand. If the growers will take a firm stand and stick together they may depend on securing a favorable reply to their request. The growers must combine to fight a combine. Their greatest enemy will be weak-kneed growers in their own ranks who fear to hold out. The determination shown by the growers is an augury of success.

At the annual convention of the Ontario Association of Fairs and Exhibitions, held in Toronto February 14-16, the delegates voted in favor of having the Agriculture and Arts Act so amended that horticultural and agricultural societies will not be brought into conflict in regard to their government grants. As representatives of the horticultural societies of the province took the same stand at their convention last November the time has come when a change should be made. Some arrangement is needed by which horticultural societies will receive their grants in proportion to the work they are doing. It will be a most difficult matter to devise a satisfactory scheme and members of societies should give it careful attention.

Are you watching us grow? Never before has The Canadian Horticulturist carried as many or as valuable advertisements as those in this issue. Look them over; they are interesting reading. If this progress continues we will soon add several more pages of reading matter which will greatly strengthen all our departments. We intend to make The Canadian Horticulturist the best horticultural magazine published on the continent, and it is a question if it is not that already. Most of the other magazines specialize on some one line.

At last we have heard from the vegetable growers. Several attempts have been made to form a provincial assiciation but these have never gone much beyond the immediate localities of the promoters. Prospects are bright for the early formation of a strong provincial association. Such an organization will not only benefit the growers but the horticultural interests of Ontario. Let us unite in wishing the movement God-speed.

During 1905 The Canadian Horticulturist will not give premiums of plants or shrubs to subscribers. While these premiums have been appreciated by many subscribers in the past they have often proved a disappointment to the recipients. This year the money, hitherto used to send out these prizes, will be expended to improve the magazine and all our subscribers will reap the benefit. A reduced subscription price is offered for clubs of new subscribers and to societies.

Copies of the index of The Horticulturist for 1904 are ready for distribution and will be sent to any address upon receipt of a one cent stamp.

Want the Tariff Changed

The Hamilton District Gardeners' and Fruit Growers' Association has started an active agitation to secure changes in the tariff on some fruits and vegetables. Petitions are being circulated and widely signed asking that the tariff on strawberries, potatoes, tomatoes, peaches, cabbage, cucumbers, watermelons, muskmelons, beans and celery be removed, so that Canadian producers may have the benefit of the Canadian markets and not be forced to suffer as heretofore on account of foreign products coming into competition with theirs.

These petitions are being circulated in the vicinity of St. Catharines, Dunnville, London, Dundas, Bartonville, Winona, Stoney Creek and many others. Thousands of signatures have already been secured. Growers in other sections who would like to circulate petitions may secure a form by writing to James A. Stevens, Box 175, Hamilton, Ont.

SELLING CANADIAN FRUIT IN GREAT BRITAIN

The charge that certain British importers of Canadian fruit have had an understanding whereby they have been able to keep down the price is not supported either by Mr. A. W. MacKinnon, Canadian Commercial Agent at Bristol, Eng., and formerly chief of the Dominion Fruit Division, or by Mr. Grindley, Chief Inspector for the Department of Agriculture at Liverpool. Letters on this subject have been received by The Horticulturist. In his letter Mr. MacKinnon writes as follows:

"It is utterly impossible for me to endorse such charges of dishonesty on the part of brokers here, without reflecting upon the just and the unjust alike, and hearsay evidence is not sufficient to convict even the individual accused, much less an entire class of merchants. On the other hand, I have always recommended growers to unite in such a way as to enable them to conduct their own sales, either for a fixed price in Canada, or by means of auction or private sale under the supervision of one of themselves in England. The old saying is true in the fruit business as elsewhere, if you want a thing done well do it yourself.

"No one can possibly have the interests of the growers as fully at heart as a committee of themselves, and, therefore, I recommend once more the cooperative plan to all progressive growers. While I think the Ontario growers occasionally get more than their fruit is worth, owing to peculiar market conditions at the moment of sale, the surest way for them to get just values is for the British buyer to make his purchases in Canada, subject to inspection, and acceptance or refusal at the Canadian port. Growers would then take the risk of the rail journey to the seaport, after which the buyer would assume all risks."

CHARGES DISCREDITED.

In his letter, which is addressed to Mr. W. W. Moore, Chief of the Markets Division of the Department of Agriculture, who wrote to him at the request of The Horticulturist, as mentioned in the February issue, Mr. Grindlay writes as follows.

"I have your letter asking for a statement regarding the charges of fraud that have been made against the Liverpool fruit brokers. Some time ago a letter, written over the name of Mr. George A. Cochrane, of Boston, appeared in the New York Journal of Commerce, which was copied by the Canadian press. At the time the letter came under my notice I did not consider it worth attention, there being no specific charge to warrant a special investigation. The bulk of the American and Canadian apples shipped to Liverpool are sold by auction at the Commercial Sale Room by an association of fruit growers. A full description of the manner in which these fruit sales are conducted will be found in Bulletin No. 19 (new series).

"Mr. Cochrane states in his letter that the fruit auctioneers are fair, but that the dealers manage at the auctions to secure the most desirable lots, and to resell the apples at private sale at high prices.

"These sales are attended by several hundred buyers from all parts of Great Britain. The competition is so keen that there is no chance of forming rings or of a dealer or buyer having a lot of fruit knocked down at a lower price than the actual market value. The hundreds of other buyers present would not tolerate such work. The people who buy at these sales are in the wholesale trade, and many buy to reship to different parts of Great Britain and Ireland, and naturally expect a profit.

PRINT A CATALOGUE.

"Each of the fruit brokers who belong to the Fruit Brokers' Association prints a catalogue giving full details of fruit sold at each sale with prices realized. A rule of the association stipulates 'That no prices shall appear in printed catalogues, except those actually obtained, and at which invoices are issued to buyers, other than owners.' This rule, which is strictly enforced, prevents bogus sales; and the printing on the catalogues of the actual prices realized prevents sending the shippers fictitious account sales.

"Another rule specifies that all goods offered in saleroom belonging to buyers must be indexed at end of catalogue, and receivers other than auctioneers cannot bid for their own fruit. Our department has had a seat in the Commercial Sale Room for the past three seasons, and Mr. Carter, our Liverpool inspector, who has been connected for some years with the British fruit trade, is present at nearly all, if not all, the sales, and neither he nor myself have ever seen or heard of a case which would warrant such an impeachment of the honor of the members of the Liverpool Fruit Brokers' Association, as was made by Mr. Cochrane."

THE PROSPECTS FOR EARLY VEGETABLES

The Winnipeg market would take early vegetables if we could get them early, but I do not think it pays for the trouble, owing to the fact that our arrangements are all made for early vegetables, such as tomatoes, cabbages, cukes, beans, and all that kind of truck, early in the season. Prices are gradually going down in the south and are very low. The southern vegetables invariably interfere with the early products of Ontario growers. I do not, therefore, hold out any inducements for a profitable business along this line. There is no argument at all as far as the quality is concerned, as the Ontario vegetables are certainly very superior. When it comes down to vegetables, however, quality is largely thrown aside, and I do not think, as already stated, it would pay to increase the production to any great extent.—(G. M. Hunt, Manager Fruit and Produce Exchange, Winnipeg, Man.

All the early vegetables that we handle in this market would make no material difference to what would be grown in South Essex. We import a few from the American side, but we can get them shipped in the evening and have them here the next morning at 10 o'clock, while from Essex it takes 2½ days. We consider it would not pay for Ontario growers to ship to this market.—(The Macpherson Fruit Co., Winnipeg, Man.

FRUIT TRANSPORTATION MATTERS DISCUSSED

P. W. HODGETTS, SEC'Y. ONT. FRUIT GROWERS' ASSOCIATION.

The Transportation Committee of the Ontario Fruit Growers' Association met in Toronto, Feb. 15, to outline what action should be taken in reference to transportation grievances. Mr. Jas. Hardwell, chief traffic officer of the Railway Commission, met the committee to discuss the question of ventilated and frost-proof cars. Owing to the number of systems in use and the diversity of opinion in respect to their relative value it was decided to put off any decision on this matter until another year. In the meantime extensive experiments will be conducted. With the consent of the railways, four or more cars of tender fruits will be shipped during September or October from the Niagara district to the western markets in the same train. These cars will be of the various patterns now in use, including the Wicks, Bohn, Hanrahan, New York Central Produce, and Canada Atlantic. Thermographs will be placed in each car so that accurate records of the temperature during the trip will be kept.

Later in the season the same plan will be carried out with respect to apples, a number of the various type of cars being loaded at Belleville or Trenton and shipped by the one train to the seaboard under similar conditions. This latter test will be to ascertain the desirability of the cars for protection from frost. It is estimated that 25 per cent. of the apples sent out from Ontario during the late fall and winter are frosted en route and arrive at their destination in a slack condition.

The question of rates was considered. The rate on apples to the seaboard is altogether too high. The rate on carload lots from Buffalo to New York, a distance of 425 miles, is 24 cents per barrel, while the rate from St. Catharines to Montreal, a distance of 400 miles, is about 40 cents. A sub-committee of Messrs. Bunting, McNeill and Graham, was appointed with authority to correspond with and interview the railway authorities with a view to better equipment and service, and at the same time to secure if possible a reduction in rates. Failing to get proper concessions from them the association will take active measures to press the claims of the fruit growers before the Railway Commission.

PRICE OF TOMATOES AND CORN

The market gardeners of Ontario consider they are not receiving a fair price for the produce they supply to the canners, and are taking steps to secure a higher figure. The tomato growers in and about Hamilton made a move some time ago, and at a largely attended meeting of the fruit and vegetable growers of the Niagara district, held at St. Catharines, January 28, a resolution was passed defining their position and demanding a better price. The following is the resolution as submitted to the meeting by a committee appointed to draft it : " We, the undersigned farmers and gardeners of the Niagara Peninsula, after taking into consideration the increased cost of the manure and labor required in growing and handling the crops of tomatoes and corn for the canning companies, have found that we cannot continue growing these crops at the present prices with any fair remuneration for our work. But we will agree to grow for the season of 1905 tomatoes at 30 cents per bushel and sweet corn at $8 per ton (the seed furnished free to the grower) and sign any fair form of contract agreed upon between the growers and canning companies."

The resolution was signed by a large number of the growers, and steps will be taken to secure the names of all the growers in the district.

Among those who took part in the discussion were Messrs. C. M. Honsberger, president, in the chair; Robert Thompson, W. C. McCalla, Geo. A. Robertson, A. Pay, Angus Shaw, J. A. Collins, W. H. Bunting, Murray Field and T. Nickerson. Mr. W. A. Emery, of the Hamilton association, was in attendance and gave valuable assistance.

The canners combine, which controls nearly every factory in the district, has announced that they will require nearly 800,000 bushels of tomatoes, and the factories outside the combine will require about 200,000 bushels. The increase in the price, from 25 cents to 30 cents a bushel, would mean about one-third of a cent per can to the canners, so that, as one speaker pointed out, there is nothing in the threat that the increase would compel them to close their factories.

As to corn, letters submitted by Mr. McCalla from the canners stated that they were paying $8 a ton, which they stated is more than is paid in any part of the Unitetd States. He pointed out that this is incorrect, $10 being paid in some places. The meeting took a very firm stand in favor of better prices. The increase demanded is five cents a bushel on tomatoes and one dollar a ton on corn.

We have found The Canadian Horticulturist a very good advertising medium.—(The Winona Nursery Co., Winona, Ont.

Enclosed find $1 for renewal. The Canadian Horticulturist is well worth it.—(R. Brodie, Westmount, Que.

THE HORTICULTURAL SOCIETIES ARE ACTIVE

The Smith's Falls Horticultural Society held its annual meeting in January. The former president, Dr. J. S. McCallum, was re-elected; S. E. Arnold was elected secretary-treasurer, and a strong staff of directors was appointed. Reports read showed that good work had been done.

The receipts for the year were $288.23. There was $153.95 paid out for trees, shrubs, plants and bulbs for distribution to members and for four beds of bulbs of different kinds in public park ; $88.40 for The Canadian Horticulturist and pamphlet on bulb culture ; $1.63 for work on beds in park, and expenses of delegate to the Toronto convention, leaving a balance of $24.25 on hand. The list of members for 1905 numbers 107.

Oakville Doing Good Work

Attendance at the annual meeting of the Oakville Horticultural Society was small. Officers elected : Pres., James Waldbrook ; sec. and treas., J. Cavers. At the first meeting of the year, held late in January, a resolution was passed favoring the amendment of the Agriculture and Art Act so as to provide for government grants to horticultural societies, to be apportioned on a basis independent of the district agricultural societies, and for effective work done by each society. A distribution of plants to members was ordered.

A proposal to duplicate grants for flowering shrubs and perennials made by the boards of the town schools and of two neighboring rural schools, not exceeding an aggregate sum of $25, was discussed and left over for further consideration. Action has been taken to secure a boat service to Toronto for the benefit of the fruit growers and also in conjunction with Burlington and Clarkson's to obtain lower rates from the express companies on shipments of fruit to O'Harve and Montreal. Notice was given that the desirability of establishing a canning factory would be discussed at the next meeting.—(J. Cavers, Sec.-Treas.

Toronto Carnation Show

The annual carnation show of the Toronto Electoral District Society, the Toronto Horticultural Society, and the Toronto Gardeners' and Florists' Association was held February 16 and proved a most pleasing affair. The show was not an extensive one, as it was held rather early in the season, and several of the exhibits from the United States did not arrive on account of the railway blockade. The principal competition was for the challenge cup for the vase of best carnations. There were nine entries and the award went to the Chicago Carnation Co., of Joliet, Illinois, who scored 95 points. The prize flower was a beautiful white carnation, Lady Bountiful.

The largest exhibitor of carnations was Mr. J. H. Dunlop, of Toronto. Other exhibitors were the Chicago Carnation Co., Wm. Findlay, of Brampton, and Charles Turp, of Toronto.

FLOWERING PLANTS, SHRUBS AND PERENNIALS

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No. 7. Floral. Bruce's Royal Nosegay Sweet Peas. Ten exquisite distinct varieties. Retail value 50c, **for 25c, postpaid.**

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JOHN A. BRUCE & CO., Seed Merchants

HAMILTON, - ONTARIO.

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Mr. Findlay also showed some beautiful violets. Several lots of exceedingly well grown ferns, showing high culture, and that were much admired, were exhibited by Mr. Joseph Bennett, of Montreal.

The collection of cut flowers, which took first prize, and which were shown by Mr. Dunlop, consisted of roses, lillies of the valley, Bermuda lily, tulips, daffodils, narcissus and hyacinths. They made a fine display. The competition for a collection of flowering plants on a space not exceeding 50 square feet, arrangement to count, was between Manton Bros, of Eglinton, and J. H. Dunlop, of Toronto, who took the prizes in the order named. Messrs. Manton's collection included cyclamens, ferns, hyacinths, begonias, azaleas, lilacs, etc., while Mr. Dunlop's included ferns, azaleas, lilacs, rhodendrum, Bermuda lily, etc.

What Hespeler Has Planned

The new officers of the Hespeler Horticultural Society are: Pres., David Rife; sec., Robert Davis; treas., J. E. Warren. A board of nine directors was appointed, which was given full power to act in the interests of the society. The directors have decided to hold an exhibition in the fall and to offer prizes.

Each member will receive fruit trees, or plants and seeds this spring according to their choice. A special packet of flower seeds will be given to each member, and in the fall at the exhibition special prizes will be given for the best display of flowers grown from the seeds given out. Another distribution of plants will be made to school children, with a request that they attend to them, and at the fall show enter them for competition.—(Robert Davis, Sec.

Brantford's Year's Program

The new officers of Brantford's Horticultural society are: Pres., D. Dempster; sec., R. W. Brooks; treas., J. H. Adams. At the annual meeting it was decided to subscribe for The Horticulturist for all members. It was decided also to hereafter hold the regular meetings on the second Tuesday in each month.

It is intended to supply 1,000 packages of flower seeds to each school room in the town. The children are requested to report on the growth of these seeds. Prizes will be offered for best results secured. If finances allow, prizes will be offered for best kept lawns, boulevards., etc., but only those of amateurs.

British Columbia Fruit Growers

The following are the officers of the British Columbia Fruit Growers' Association for 1905, as elected at the recent convention of the association: President, T. W. Stirling, Kelowna; 1st vice-president, Thos. A. Brydon, Victoria; 2nd vice-president, J. C. Metcalfe, Hammond; 3rd vice-president, Jas. Johnstone, Nelson; secretary-treasurer, W. J. Brandrith, Ladner; executive committee, T. W. Stirling, J. C. Metcalfe, R. M. Palmer, H. Kipp, W. J. Brandrith.

TREES OF ALL KINDS

Our Stock of

APPLE TREES

better than ever

Thousands of **Stark, Ontario, Spy, Baldwin,** and all standard varieties ready for **Spring** delivery.

Also a full line of **Ornamental Trees, Plants** and **Vines.**

Write for beautiful NEW CATALOGUE.
Salesmen Wanted.

HELDERLEIGH NURSERIES. **E. D. SMITH, - Winona, Ont.**

The Seaforth Society.—The officers of Seaforth Horticultural Society for 1905 are: Pres., Wm. Hartry; sec.-treas., Wm. Elliott. On Feb. 8 an interesting and very instructive lecture was delivered by H. W. Brown, B. A., of the Collegiate Institute staff, who took Gladiolus for his subject. It is the intention of the directors to have a lecture monthly during the season and also to encourage the planting of flowers and shrubs on the church grounds. Membership last year was 111. This year it already numbers 112, with prospects of more.—(Wm. Elliott, Sec.-Treas.

The Toronto Horticultural Society is to be congratulated on the appearance of a neat little prospectus just issued, also the program for the meetings for the entire year. One meeting each month appears on the program. That for February took the form of a carnation show, which is described elsewhere in this issue. On March 7 an "at home" is to be held in the rooms of the society. The April meeting coming on April 4 is to comprise an illustrated lecture on Pruning, by Mr. J. McP. Ross.

New officers for Simcoe Horticultural Society are: Pres., H. H. Groff; sec.-treas., J. Thos. Murphy. Various committees have been appointed for the year, and it has been decided to again make a distribution of seeds to the school children and to hold a fair at the appointed time.—(J. Thos. Murphy, Sec.

The Market Gardeners' Protective Association

The annual meeting of the Ontario Market Gardeners' Protective Association was held at Toronto early in February. The excursion committee reported a balance of $56 after paying all expenses, which amounted to $363.

The following were elected to office: Pres., J. D. Evans; vice-pres., R. Larkin; sec., F. F. Reeves; treas., John McKay; executive committee, J. W. Rush, G. Miles, Geo, Syme, Wm. Harris, C. Aymer, W. G. Carter, A. Shuter; auditors, R. Larkin, J. W. Rush. It was resolved to hold a banquet March 1, and a committee was appointed to make the necessary arrangements. A resolution was passed approving of the action of the Hamilton Tomato Growers' Association in refusing to sell tomatoes to the canners for less than 30c. a bushel.

The Carnation Growers of America held their annual convention at Chicago, January 25 and 26. The exhibit taken all round, was one of the finest ever held. The growers in attendance numbered about 125, and there would have been more had the weather conditions been more favorable. Mr. J. H. Dunlop, of Toronto, was elected first vice-president. Toronto was chosen for the convention of 1906, but gave way for Boston, which had yielded its claim in favor of Chicago this year. The convention will therefore be held at Boston in 1906 and at Toronto in 1907.

TREES! TREES! TREES!

We have a full line of Fruit and Ornamental **TREES** for spring, 1905, at lowest possible prices.

Headquarters for packing dealers' orders.

Farmers wishing to buy first-class stock absolutely **first hand** and **without paying commission to agents**, should write to us at once for a catalogue and price list.

Don't wait until the last minute, as youwill be disappointed. Please order early and secure the varieties you want. Correspondence solicited.

WINONA NURSERY CO., - Winona, Ont.

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We are Headquarters for
All Kinds of Splint Baskets

FRUIT PACKAGES
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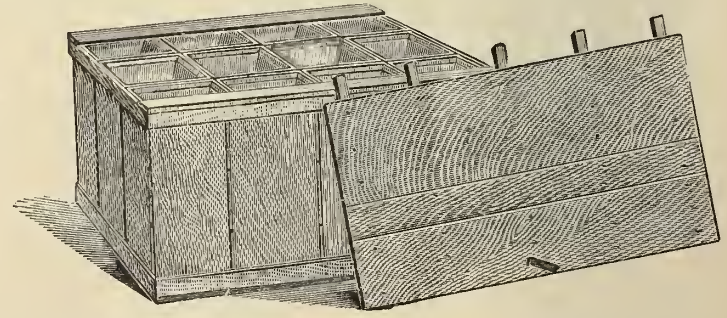

THE OAKVILLE BASKET CO., - OAKVILLE.

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See Notice in Advertising Columns.

BLACK NAPLES CURRANTS.

"Owing to nurserymen having been in the habit of propagating currants from what are known as stools," said Mr. Joseph Tweddle, of Fruitland, Ont., one of our new advertisers, to a representative of The Horticulturist who visited his place recently, "that splendid variety Black Naples has deteriorated in bearing qualities and, unfortunately, has been largely discarded. Where it has been continuously propagated from bearing plantations it has maintained its place as the heaviest producing variety. It is the leading heavy cropper with those who have the genuine stock."

STEEL POSTS FOR GRAPE VINES.

Fruit growers are aware that wooden posts are becoming scarce, and are not sufficiently durable and rigid to satisfy their requirements. To meet this difficulty The Canadian Portable Fence Co., of Toronto, have designed a steel post especially adapted to the training and sustaining of grape vines. Their advertisement appears elsewhere in this issue.

They have put on the market an end post, modelled after their sterling standard end post for wire fencing, which is known from the Atlantic to the Pacific. This post weighs 50 pounds. Their intermediate posts consist of a single, stiff angle bar, weighing 7 to 8 pounds. These posts present the combined qualities of lightness, rigidity and permanence. Although this is the first season that the company has produced grape posts, their reputation for steel fence posts is sufficient guarantee for the new article. Fruit growers of Canada begin to perceive that they do not have to search beyond their own Dominion to find an article suited to their needs.

TO SECRETARIES OF HORTICULTURAL SOCIETIES

Secretaries of Horticultural Societies should write Wm. Rennie of Toronto for his special discounts to Societies on Vegetable and Flower Seeds and Plants, making their own selections from Rennie's Catalogue for 1905. This is a good offer and one which will no doubt be most acceptable to members

NURSERYMAN WANTED.

The Webster Floral Co., of Hamilton, is anxious to secure the services of a practical nurseryman to assist or take charge of their nursery of shrubs, etc.

Power Sprayers.—A large enquiry for the Wallace Power Sprayer is reported by F. Hamilton Co., Limited, of Hamilton. Indications point to this as being about the simplest method of obtaining power with the least trouble, there being little to get out of order.

Owing to the advancing and strong tone of the copper market blue vitriol will likely be much higher in price before the season is over.

STRAWBERRY RASPBERRY
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SMALL FRUIT PLANTS
GARDEN ROOTS

Gooseberries—Josselyn, Red Jacket, Downing, Pearl and Houghton
Currants, Black—Lees' Prolific, Champion, Naples.
Currants, Red—Moore's Ruby, Childs' Ruby, Red Cherry, Victoria, Varsailles.
Currants, White—White Grape.
Raspberries—Miller, Cuthbert, Japanese Mayberry.
Black Bonis—Tuzler's Prolific.
Grape Vines—Worden, Moore's Early, Campbell's Early, Salem, Delaware, Eaton, etc.
Strawberries—Clyde, Williams, Splendid, Saunders, etc.
Strawberry Raspberry—Tree Strawberry.
Garden Roots—Asparagus, Palmetto, Conovers,—Rhubarb (divided roots), Linnaeus: Victoria—Sage Roots.

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NURSERYMAN
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FRUITLAND, ONT.

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Good stock of first-class currants. Special lines of genuine Black Naples. Stock guaranteed to be from heavy bearing plantations. : : :

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Catalogues supplied free to members.

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(CONCENTRATED SOLUBLE PLANT FOOD)

SPECIAL BRANDS

—FOR—

MARKET GARDENERS, FLORISTS, VINE AND FRUIT GROWERS.

SOLD UNDER GUARANTEE OF ANALYSIS.

Contain NO Organic Matter, Refuse Materials, Sand, or Filler.
NO Harmful Mineral Acids to counteract Plant Food or check growth.

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APPLE TREES $5.00 TO $10.00 PER 100

Currant Bushes and Grape Vines, also Poplar Trees, for sale at bargain prices, boxed free.

These trees, plants and vines must be sold at bargain prices, as we are overstocked with them. We have a surplus of both Carolina and Lombardy Poplars. Help us to sell 1,000,000 first-class trees, shrubs and vines as described and priced in our large new catalogue, which is mailed free when requested by postal card. Established 25 years $100,000.00 capital. Trees true to name, boxed free. Let us price your list before buying elsewhere. Mention where you saw this advertisement and we will mail you a copy of Green's Fruit Magazine.

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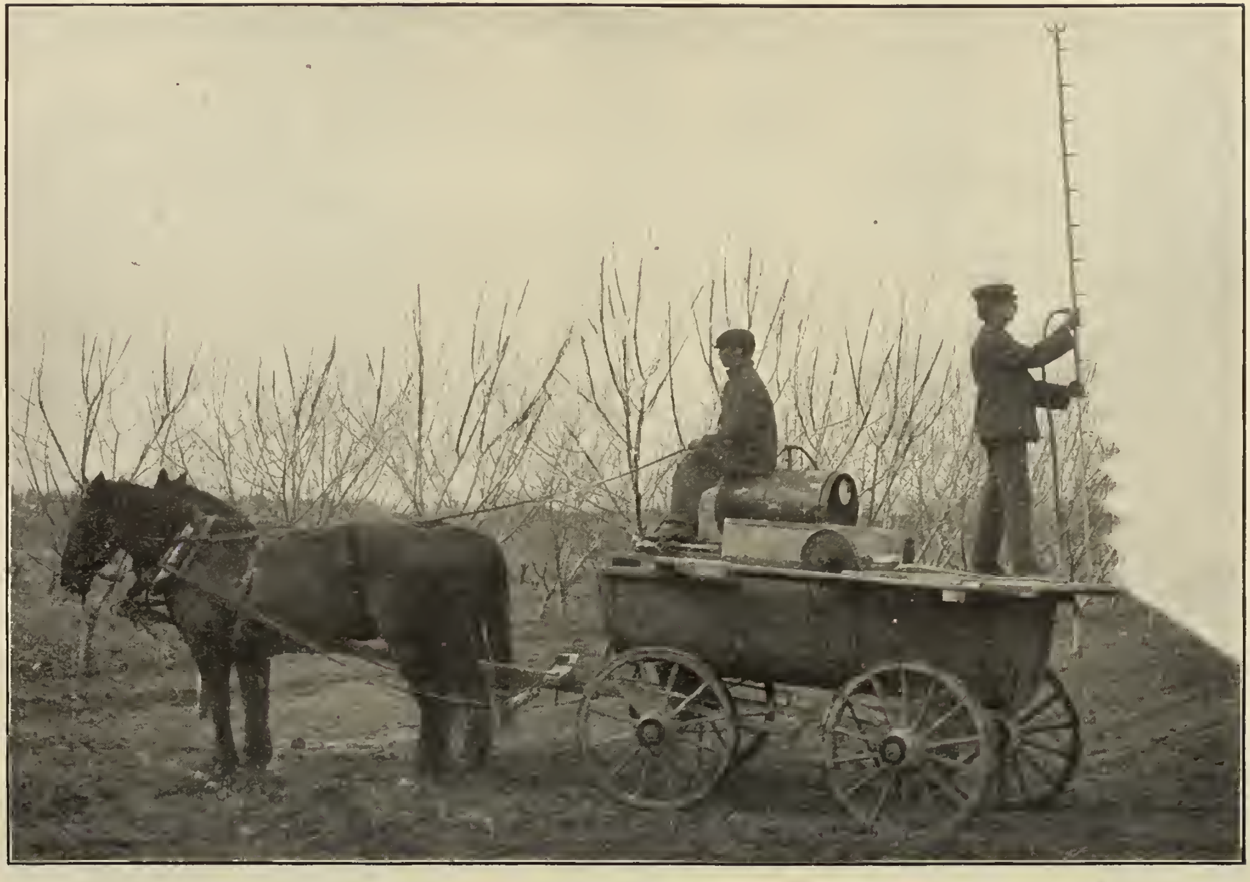


A Valuable Power Sprayer at Work in the Orchard of Mr. J. W. Smith, of Winona

With this sprayer Mr. Smith last season sprayed five acres of eight year old peach trees in ten hours. The trees were planted 16 by 16½ feet, their branches almost interlocking. Two extension rods with four nozzle heads were used. This shows a spar with 19 vermorel nozzles being used.

The Canadian Horticulturist

APRIL, 1905

VOLUME XXVIII ※ NUMBER 4

THE WISHES OF FRUIT GROWERS IGNORED

IN spite of the apparently unanimous wishes of the fruit growers of Canada the Hon. Sydney Fisher, Dominion Minister of Agriculture, has placed the Fruit Division under the control of the Dairy Commissioner. This means that in matters of policy affecting the fruit industry the chief of the fruit division must consult the Dairy Commissioner and has no right to confer direct with the Minister of Agriculture. It means that the fruit industry is placed on a lower level than the dairy and live stock industries and even than the matter of the sale of seeds, as all three have been recognized by the appointment of commissioners subordinate in their work only to the Minister of Agriculture.

When it became known, some months ago, that it was proposed to place the chief of the fruit division under the control of the Dairy Commissioner protest was immediately made by fruit growers in all parts of Canada. Resolutions opposing such a move were passed by several associations including the provincial fruit growers associations of Prince Edward Island and British Columbia.

The protest from the British Columbia association was as follows:

"We, the undersigned, the members of the executive committee of the British Columbia Fruit Growers' Association, beg to protest against the reported proposal to unite the Dairy and Fruit divisions of the Department of Agriculture under one head. We feel that the fruit industry in the Dominion is becoming so important that the chief of the Fruit Division should be next to the minister and not subordinate to the chief of any other division.

(Signed) "R. M. PALMER.
"H. KIPP.
"T. W. STIRLING.
"J. C. METCALFE.
"W. J. BRANDRITH."

The Prince Edward Island growers at their annual convention in December passed the following resolution unanimously:

"Whereas it has come to the knowledge of this association, through the press that an amalgamation of the Fruit with the Dairy Division of the Department of Agriculture, Ottawa, is in contemplation; therefore it is resolved that this assemblage of the fruit growers of Prince Edward Island do respectfully express to the Honorable the Minister of Agriculture its unqualified disapproval of any such amalgamation as detrimental to the large and increasing horticultural interests of Canada, which call for extension in their central offices rather than restriction."

Other provincial associations would have taken similar action had they heard of the proposal in time. As it was, many prominent fruit growers wrote direct to Mr. Fisher. A number of papers also registered vigorous editorial protests.

For some time it was believed the proposal to unite the two divisions had been abandoned. The announcement by the Hon. Sydney Fisher that he had carried out his oiginal intention came, therefore, as a great surprise to fruit growers generally.

THE MINISTER'S REASONS.

The reasons for this action, as given by the Hon. Sydney Fisher, in the House of Commons, are as follows:

"On the passage of the Act to provide for the marking and inspection of packages containing fruit for sale, known as the "Fruit Marks Act, 1901," it became necessary to organize a staff for the administration and enforcement of the Act. The organization was placed, by the Minister of Agriculture, under the control of the Commissioner of Agriculture and Dairying, Dr. James W. Robertson, and became known as the fruit division of the branch.

"In addition to the enforcement and administration of the Fruit Marks Act the fruit division was charged with the supervision of the packing and transportation of fruit, particularly in cold storage and cool chambers, and the marketing of the same, and this brought the work of the division in close connection with the cold storage and extension of markets divisions, which, having been organized principally for facilitating the transportation and promoting the sale of dairy products, were in charge of the chief of the dairy division, Mr. J. A. Ruddick, under the Commissioner of Agriculture and Dairying for several years prior to the retirement of the latter.

"Upon the retirement of Dr. Robertson, and the abolition of the office of Commissioner of Agriculture and Dairying, Mr. Ruddick was appointed Dairy Commissioner, the work of the cold storage and the extension of markets divisions being continued under him; and owing to his close relations with the work of the fruit division, as above stated, it was deemed advisable to place the work of the latter division in his charge as well. The chief and other officers of the fruit division have been retained in office with the same duties as formerly, which they will hereafter perform under the dairy commissioner, as they formerly did under the Commissioner of Agriculture and Dairying.

"It is the intention of the Minister of Agriculture to make the work of the department, both in the fruit division and at the experimental farms, commensurate with the needs of the fruit industry in Canada."

FRUIT GROWERS NOT SATISFIED.

This explanation has not satisfied fruit growers. While it is granted that Prof. Robertson was in charge of the fruit division it is pointed out he was also in charge of the live stock, dairy, poultry, seeds and other divisions of the departmental work and that he was largely responsible for their being established. No objection is taken to Mr. Ruddick having charge of matters pertaining to the transportation of fruit in cold storage, but there is to his having charge of matters pertaining to the Fruit Marks Act, and other matters of a similar nature relating to the fruit industry.

VIEWS OF LEADING GROWERS.

That fruit growers are thoroughly aroused over this matter will be seen by the following letters which have reached The Horticulturist from all parts of Canada:

BRITISH COLUMBIA.

W. J. Brandrith, Sec.-Treas. British Columbia Fruit Growers' Association: The fruit interests of this Dominion are as deserving of recognition as any other industry. Not that we have anything against Mr. Ruddick, on the contrary we esteem him very highly, but we want a man at the head of the fruit division who has had as wide an experience in the fruit industry as Mr. Ruddick has had in the dairy industry. Surely Hon. Mr. Fisher will not go in the face of a united country and maintain an appointment that is unsatisfactory to those whose interests he is there to look after.

ONTARIO.

Murray Pettit, Winona, Ont., Director Ontario Fruit Growers' Association: The various fruit growers associations throughout the Dominion should press this matter to the very extreme. Not only fruit growers' associations, but farmers' institutes and county councils in fruit growing districts should take it up. This could be done by a circular and petition being sent to them to be adopted and forwarded to the department, followed up by a strong delegation. It is the duty of our association to take this matter up and press it.

NEW BRUNSWICK.

Henry Wilmot, Oranacto, N. B., Treasurer New Brunswick Fruit Growers' Association: I am strongly of opinion that the fruit growing industry of Canada is of sufficient importance to justify the appointment of a fruit commissioner who will be responsible to the Minister of Agriculture only.

QUEBEC.

H. W. Wood, St. Johns, Que., Secretary The Pomological and Fruit Growing Society of the Province of Quebec: It is a mistake to place the chief of the fruit division under the dairy commissioner. The interests of the fruit growers are of sufficient importance to entitle them to a separate commissioner. This, I believe, is the opinion of the great majority of the fruit growers of the province of Quebec.

NOVA SCOTIA.

John Donaldson, Port Williams, Nova Scotia, Director Nova Scotia Fruit Growers' Association: I am very strongly in favor of the appointment of a fruit commissioner who shall be independent of any other branch of agricultural work. I do not know of any other department of agriculture in Canada that requires more fostering care than does that of fruit.

PRINCE EDWARD ISLAND.

Rev. Father A. E. Burke, President Prince Edward Island Fruit Growers' Association: We are quite averse to this appointment, believing, as we said in our resolution, that the fruit division requires extension, not restriction, that it wants a chief more than grain or dairying. I cannot see what sinister influence is effecting this in the face of the protests gone up from the fruit men of Canada.

The foregoing are only a few of many expressions of opinion received from fruit growers. The Horticulturist will be pleased to hear from other growers as to how they consider the situation can best be dealt with.

In Setting a Tree or Shrub sift some fine, rich dirt among the roots, just enough to cover so the boot will not injure them, then with all the strength and weight you can command stamp the earth down until it is solid, then fill in a little more dirt and repeat the stamping until the whole is nearly full; then fill the rest of the hole with loose dirt and leave it with the soil pitching toward the tree from all directions. If it is properly set you cannot pull it up. Do not try to put all the earth back, but throw away some. The same general rules apply to everything from a strawberry plant to a shade tree.

Cooperative Spraying.—Last year was our first experience in power spraying and we undertook a little too much, so that we only covered the route three times, and our pressure was not altogether satisfactory. Where work was done carefully results were quite satisfactory, and with last year's experience we expect a great improvement this season.—(W. R. A. Ross, Sec.-Treas. Chatham, Ont., Fruit Growers' Association.

THE SEEDLESS APPLE IN CANADA

W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA.

A WONDERFUL seedless apple is said to have been developed by a western experimenter. There have been seedless apples in Canada for many years. One was exhibited at the annual meeting of the Ontario Fruit Growers' Association at Brantford, Ont., December 19, 1900. In the report of that meeting the following reference is made to it:

"A curiosity in the form of a seedless apple was shown by Mr. W. A. Whitney, of Iroquois, Ont. The apple was quite normal in outward appearance and of good size. Mr. Whitney says that none of the apples contain seeds."

As Mr. Whitney is dead, I wrote to Mr. A. D. Harkness, Irena, Ont., for information regarding this fruit. He obtained scions from the tree for me last spring. It was reported by the owner, Mr. L. Cameron, Ont., to be both seedless and bloomless. I asked Mr. Harkness to obtain some of the blossoms or places from which the fruit sprung, and the following description was made of them:

"Apetalous apple blossoms received from Mr. A. D. Harkness, Irena, Ont., from tree grown by Mr. L. Cameron, Iroquois, Ont., May 26, 1904: About one dozen flowers received. Flowers in clusters averaging three each. Calyx apparently very similar (these were not compared with the calyx of perfect flowers at the time) to that of ordinary flowers. Petals abortive, very small, and hidden by the sepals. Flowers evidently all pistillate. Appear to be 15 stigmas to each flower. W. T. Macoun."

Knowing the interest in seedless apples I visited Iroquois, August, 1904, and went to see the tree, which is in Mr. Cameron's garden. It was found in a very thrifty condition, but with no fruit. This lack was explained by the fact that there were practically no apples in the orchard last year, hence the pistillate flowers could not be pollenized. Mr. Cameron informed me that it was a seedling tree about 10 years old, and probably fruited for the first time in 1900, when the fruit was shown at Brantford. He has this seedless apple top grafted on another variety in addition to the original tree. The apple, as shown at Brantford, was a rather handsome yellow apple, above medium in size and of fair quality. I remember testing it and noting that it was seedless. It was an early winter variety. Next summer we hope to obtain a full description.

In April, 1904, the following item appeared in the Prince Edward Island Farmer:

"In a recent issue of the Farmer we published the result of an experiment in apple growing by which a noted Colorado orchardist, after seven years of experimenting, had succeeded in producing a seedless apple. It was noted that the tree bearing this scientific wonder bears no blossoms, and that the fruit resembles a naval orange. Last Saturday, to our surprise and pleasure, we received a box of seedless apples grown last year in the orchard of Mr. Hugh Ramsay, Port Hill, with the explanation that similar apples had been grown yearly on the same tree during the past 30 years. Examination shows that the apple is entirely solid; there are no seed chambers nor any semblance of seed; it is well formed, richly flavored, and a good winter keeper, the samples received being firm and fresh, although stored in ordinary barrels. The tree bearing this peculiar variety was full grown and bearing heavily when Mr. Ramsay came into possession of his farm 30 years ago. Since then it has been a heavy bearer yearly, and in no case has a seed ever been found in any of the fruit."

I wrote to the editor and also to the owner of the fruit, asking for specimens, but unfortunately the best were gone, the specimen received being small and the quality, judging by the fruit tested, not more than medium. The core was small and was situated nearer the calyx than in ordinary varieties, and the cartilaginous part of the core was not as thick as in varieties with seeds. There were no seeds. I have tried to obtain fruit again this winter, but so far without success.

When attending the annual meeting of the Prince Edward Island Fruit Growers' Association in December, 1904, I was shown a specimen of a seedless apple grown by Jesse A. Wright, North Bedeque, P. E. I. This apple was past best condition, but was seedless, with a small core confined to the calyx end of the apple.

Unless a seedless apple is as good or better than a McIntosh Red, Spy, King, or Spitzenburg, it is of little practical value, unless for evaporating or canning, and as so many culls and windfalls of well known varieties can be obtained for this purpose, seedless apples, unless of great merit, will not be popular. It is possible that by cross breeding seedless apples with varieties of the best quality something will be produced of real commercial value, and one of the Canadian seedless apples is being propagated at the Central Experimental Farm with the object of being used for such work.

Seedless apples are not novelties, as they have been recorded for nearly 300 years, and were probably known before that time. The last time the seedless apple received such public notice as now was about 15 years ago.

PARIS GREEN AND THE BORDEAUX MIXTURE

PROF. W. L. LOCHHEAD, O. A. C., GUELPH.

IT is important for several reasons that good paris green should be procured for orchard spraying. The good paris green should contain between 50 and 56 per cent of arsenious oxide, which should be in combination with copper. As a matter of fact about four per cent. of the arsenious oxide is in a free state, known as soluble arsenic.

It is this free, water-soluble arsenic which makes paris green dangerous to plants. Lime is accordingly added to combine with this free arsenic and form an insoluble arsenite. When the amount of free arsenic is large, however, or when the paris green is of a poor grade, experience has shown that the addition of lime does not prevent the injurious action, but actually increases the amount of injury.

There are some good tests for pure paris green:

1. Pure paris green is entirely soluble in ammonia. The percentage of free arsenic, however, is not shown by this test.

2. Pure paris green has a bright green color—any dullness or whiteness is indicative of adulteration.

3. Under the microscope pure paris green should consist of clean green spheres, wholly separate from one another.

The water-soluble or free arsenic is sometimes very dangerous to foliage, especially during very dry weather with much dew or fog at night. It would appear as if the dew dissolved the arsenic, which is then absorbed by the plant. At other times very little or no injury results from the application of uncombined arsenic.

It is always wise to get the very best grade of paris green for orchard work, for such will contain no adulteration and but a small percentage of free arsenic.

It is unlikely that liquid Bordeaux will ever be replaced to any extent by the powder form in orchard spraying operations, for it is doubtful if the dust will cover every portion of the leaf as effectively as the liquid. Again, it would appear that the action of the liquid Bordeaux is continued for some time in the presence of the lime, water, and carbonic acid of the air with the continued formation of copper compounds poisonous to fungous spores, and in some conditions poisonous to the plant itself. There is a growing tendency to reduce the quantity of lime in the making of Bordeaux, so as make the solution just about neutral. This is all right for ornamentals, and for orchard trees in dry seasons, but in wet weather the addition of extra lime is recommended.

Many growers state that they fail to get good results with Bordeaux. The main cause of failure lies in the quality of the lime used, the manner of slaking the lime to get the milk of lime, and the way the stock solutions are mixed in the spray tank or barrel. (1) The lime should be fresh and firm. (2) Only small amounts of water should be added to the lime in slaking. If too much water is added many small lumps will remain unslaked. When the lime is fully slaked considerable water should be added slowly while the whole is being stirred. (3) When the Bordeaux is being prepared from the stock solutions, the barrel of milk of lime should be thoroughly stirred, and the milk of lime—a thin white wash—emptied through a strainer into the spray tank. It is very essential that the concentrated stock solutions should not be mixed except in the presence of a large quantity of water.

It is advisable to use the 3-3-40 Bordeaux formula on Japan plums and peach trees on account of the tender nature of the foliage of these trees.

In districts where the lime-sulphur wash is not used on account of the absence of the San Jose scale, Bordeaux should be applied to prevent leaf-curl of the peach. It has been proven pretty conclusively that if a thorough application be made, a week or so before the flower buds open, the leaf-curl will be practically absent from peach orchards treated in this manner.

For the prevention of the black rot of grapes the first application of Bordeaux need not be made until the young shoots are 12 to 18 inches in length. The second application should be given immediately after blossoming, about the first week in July.

THE CORELESS APPLE EXCITEMENT

PROF. JOHN CRAIG, CORNELL UNIVERSITY, ITHACA, N. Y.

THE excitement over coreless apples has reached quite an acute stage. Royalty has become involved. King Edward is an honorary patron. The apple which started out as a seedless form has, in six months, travelling through various types of advertising media, reached the throne of England, leaving its core somewhere en route.

The whole story of this wonderful creation savors of quackery, and I am inclined to lose patience with horticultural journals which offer their columns to the exploiting of an absolutely unknown plant production in this generous, free and decidedly unsophisticated manner. Can it be that horticultural journals are becoming inoculated with the germ which develops a craving for sensationalism? Are they imitating the yellow hue of some of their strictly news-dealing contemporaries?

This introduction—invention it was first called in the associated press dispatch—has been advertised with more than ordinary skill. The seedless enterprise is being pushed by shrewd business men who are taking advantage of the avidity of newspapers for something novel and the credence and desire of the public for something different. I am not surprised that a paper like the Scientific American should be drawn into the net, because that is quite outside of its scope and purview, but I am astonished to see The Canadian Horticulturist lend prominent space to the foisting on a gullible public something, which as yet is vague, indefinite, untested and may prove a fake so far as adding anything substantial and useful to our fruit lists.

By the way, is this company proceeding along the lines of those who, before selling, first prove the value of their acquisition by actual trial? Are the experiment stations to be given an opportunity to pass on the merits of the variety, or is this extensive advertising to proceed coincidentally with the propagation and sale of the trees? It would seem that the latter method is to be followed. Although the writer was promised specimens for examination last fall, they did not arrive for some reason; and unless I am misinformed, the samples exhibited in St. Louis were safely embalmed in antiseptic fluids and shown through a glass covering.

There is before me a copy of the National Fruit Grower, of St. Joseph, Mo., in which an extension or elaboration of the stock article published in last month's Horticulturist occupies a prominent place. Passing over the highly garnished statements of the incident of the sale of two specimens for 60 shillings in Covent Garden market, here are some of the statements volunteered by Mr. Sampson Morgan, of Broadstairs, England, the writer of this noted contribution: "In the near future seedless and coreless apples will be on sale in the fruit shops of every city in the United Kingdom." What prophetic vision enables this horticultural seer to pronounce on the success of this variety without a single trial having been made outside the grounds of the interested originator? "The tree produces a cluster of small green leaves like a disorganized bud. It is here that in due course the fruit forms." How astonishing! The apple is a multiple bud. As the winter bud expands in spring the several blossoms which it contains are disclosed. Apple blossoms without petals are not at all uncommon; several specimens of these apetalous blossoms were sent me last spring. The petal is not an essential organ.

We read further that there being no petals and therefore no fragrance, the codling moth passes it by unrecognized! The author of this ingenuous statement forgets (if he ever knew) that the codling moth gets in its fine work after the petals fall and the fragrance (?) has departed. True, like the writer of the interesting article, a second sight may enable it (the moth) to look within and discover the abnormality of the specimen and thus be frightened away. Again, "the trees are being propagated from buds, no seeds being available." Another revelation! Now, it may not be known to Mr. Morgan, but it is a fact nevertheless, that nurserymen have been propagating named varieties in this country by graftage, in which buds are used in various ways, since the settlement of the country. History further informs us that this method came to us from the Greeks and Romans or possibly an older civilization. We grow pansies and pop corn from seed, not apple trees—unless we are after something different.

Again this optimistic writer says: "The permanency of the seedlessness of the Spencer apple is beyond dispute. Over 2,500 trees are already in hand, and the stock is being extended." I am somewhat in doubt as to the nature of the stock referred to, whether the watered article of the company or the stock of this variety. My advice is to take little of either until you absolutely know what you are buying. Listen to this! "Arrangements are in progress to ensure ample supplies of these wonderful novelties in England, and their arrival will be duly announced in the advertising columns of the general press." We understand that a stock of 2,500 grafts will, in Jack-the-Bean-Stalk style, grow to bearing size and furnish enough fruit so that after satisfying the American market there will be a sufficient surplus to supply the English markets in a short time. Perhaps this will come to pass. A single barrel of some varieties will go a long way.

But we must continue our examination of this fascinating article. "Probably half a dozen trees have appeared at different places bearing apples without seed. But these trees would not produce trees that bore seedless apples." Our best records show how seedless apples have appeared here and there for at least 200 years. But there was no associated press, and advertising facilities were painfully inadequate in those days, so that these seedless individuals lived only as local curiosities and died for lack of intrinsic qualities and business enterprise. There was an unusual outbreak of seedless apples in 1904—quite an epidemic, in fact—but the Spencer creation (method new and unknown) is the only one that caused more than a ripple before the eye of the horticultural public.

As one reads this startling article a feeling akin to the uncanny creeps over your being. It says, when standing alongside other pollen-bearing varieties, trees of this variety bear "a small percentage of the apples with one and sometimes two or three seeds, but they (the seeds) are just as apt to be in one part of the apple as the other. For instance, he (Mr. Spencer) has found a seed within one-eighth inch of the outer peeling, far removed from its core." Wonderful! Marvelous! Just think of a seed travelling around in the flesh of an apple like a needle in a man's body!

We learn further, in regard to the blossoms, that "there is a small quantity of pollen, also a stamen." This latter addition would certainly be a very necessary and antecedent attendant of the pollen. As to the characteristics of the fruit, we are also informed that these apples "grow as large as the ordinary winter apple." He may have had a Lady apple in mind; or, on the other hand, he may have meant a Fallawater. We are told that they are "red when fully mature," "contain much juice," "the flesh is firm and they are excellent keepers." An additional point of interest to the consuming public is whether they are good to eat.

Here is a statement by Mr. Morgan that I am inclined to agree with: "It has been proved that the further we get away from the original proposition (five trees) the larger and better is the fruit." My own notion that Mr. Morgan in England is just about the proper distance from this "proposition," and that before our American fruit planters take second or third hand information as loosely put together as this much-quoted article, for horticultural gospel, they should do a little thinking for themselves. Before buying any of the stock now being manufactured in the magic fashion hinted at, they should see, taste and examine the fruit. After this, buy for trial if you like.

Before closing this review there is one other quotation which should be made. It is this: "By desire (of whom?) the above record of the introduction of the coreless apple into Great Britain will be filed by the various state horticultural societies and colleges in America; also in England, Ireland, Scotland and Wales." Ho, ye secretaries! Sit up! Hear the mandate and govern yourselves accordingly. Speaking personally and as secretary of the American Pomological society, I shall wait for further instructions and information before filing a notice of the advent of this pomological marvel.

Now for a serious word in closing, while ridicule is not argument, there are times when it should be employed as effectively as possible. The claims of the article are absurd, inaccurate and impudent to a degree, when presented through recognized pomological channels to a reading and thinking horticultural public. What we should have now are disinterested opinions of those who have actually examined and tested this seedless wonder.

A Profitable Investment

IT would be difficult to find a fruit grower who is more firmly convinced of the value of spraying than is Mr. Joseph Tweddle, of Fruitland, Ont., whose place was visited recently by a representative of The Horticulturist. "I have been using a power sprayer for two years," said Mr. Tweddle, "with which I spray 100 acres of fruit, and my sprayer, although an expensive one, paid for itself, several times over, the first year. I spray two to four times, depending on the season, and aim to secure 75 to 90 per cent. of clean apples. My peach trees are only sprayed once.

Spraying in Mr. Tweddle's Orchard

"For killing insects, such as the curculio, my belief is that the old formula of four ounces of paris green to 40 gallons of Bordeaux is not strong enough to do quick work, as the insects are able to do considerable damage before that solution, which works slowly, destroys them. I use half a pound of white arsenic of lead, costing five cents, which is boiled for three-quarters of an hour in one pound of fresh lime, or boiled with two pounds of sal soda. This mixture has proved very effective. If applied too coarsely it may burn the trees, but if the spray is fine no damage should occur."

Trimming Trees

PROF. H. L. HUTT, O. A. C., GUELPH, ONT.

What season or month is the best for trimming trees? Should all fruit trees be pruned at the same time? When should shade trees be attended to?—(Amos Bruge, Brantford, Ont.

The safest time to prune or trim trees of all kinds is early in the spring after severe frosts are over and before growth starts. There is then little danger of the trees being injured by frost and severe winter weather, and wounds made at that time heal readily.

With maples and other trees, which naturally bleed freely when pruned, it is just as well to leave the trimming till late in the spring when they will not bleed so much. Bleeding is not so serious an injury as is usually supposed, but often forms a lodgment for spores of fungous diseases, which are the cause of rot.

Arrested Growth of Trees

W. T. MACOUN, C. E. F., OTTAWA.

I have some apple trees planted last spring that have not shown any sign of growth; also an Austrian pine. The apple trees are green and the pine holds its leaves. Will they grow this spring, or would you advise planting other trees in their places?—(Chas. Derdaele, Walkerton, Ont.

If the apple trees and the pine tree were alive in the autumn of 1904 it is quite likely they will live. It frequently happens when trees are received in poor condition, or if the soil is not properly prepared, or the trees not planted carefully, they will make little or no growth during the first season. If the winter is very severe it is quite possible they may die, as trees that are not in a thrifty condition suffer, but the chances are that they will live.

Spraying at the College

PROF. W. LOCHHEAD, O. A. C., GUELPH.

SPRAYING operations usually begin at the college about April 20. As a matter of fact spraying begins as soon as the orchard can be entered by a horse and cart, and no set date can be laid down. Much attention is given to the first operations, for more good can be done at this time than at any other.

The resting spores of many of the common fungi, such as mildew, scab, canker and leaf curl, and the small insects, such as the bud moth and the case bearers, which winter as half-grown caterpillars, are not yet active. An application of Bordeaux mixture and paris green at this time, before the buds have begun to open, will be very effective, not only in preventing the fungous spores, which will soon be carried to the twigs and buds by the wind, etc., from germinating and entering the tree, but also in killing the worms when they attempt to satisfy their hunger after the long winter sleep.

It usually takes two days to spray an orchard thoroughly, and for the first half day the instructor works with the men to whom are assigned the task. They are left to themselves as soon as they have shown themselves capable of doing the work properly. Our orchard is chiefly composed of small trees, consequently it is not difficult to get at all parts of every tree and do thorough work. A second application of Bordeaux and paris green is made before the blossoms open, a third after the blossoms fall, a fourth and a fifth are applied during the season at intervals of two or three weeks.

Sometimes it is advantageous to give three applications before blossoming in apple orchards, but if the first application is thorough there is little need for the one which is usually made a week later. Spraying just before the blossoms open will destroy the newly hatched canker worms and tent caterpillars, and prevent the scab and leaf spot. The application made just after the blossoms fall is intended specially to control the codling worm. The later applications, especially the one about July 1, are important, as they control the Palmer worm, apple bucculatrix, and the scab.

Saving Injured Trees

COMPARATIVELY few fruit growers attempt to save their trees which have been injured by mice. Where the cambium layer or inner bark has not been completely removed around the trees they may frequently be saved by keeping the remaining new wood moist until the growing season. This may be done by erecting a mound of fresh earth to cover the wound, by binding the wound with a mixture of clay and cow manure, half and half, covering the whole with burlap, or by simply covering the wound with grafting wax. As it is impossible always to tell by a simple inspection whether the cambium layer has been all removed it will pay in most cases to try one or other of these methods.

Bridging is practised by many quite successfully. Mr. W. W. Cox, of Collingwood, has some old trees which have never failed to bear good crops that were girdled when they were five inches in diameter for a distance of one-half foot or more. The method which he found successful consisted in boring a hole above and below the wound to a depth of half an inch or more with a half-inch bit, using for a scion a branch slightly larger than this in diameter. The ends were cut with a slope and the length was such that they could be inserted readily into these holes, above and below the wound, retaining their position by the elasticity of the wood. The points of union were covered with grafting wax and the bare wood about the trunk protected with common paint.

STRAWBERRIES AND THEIR CULTURE

W. T. MACOUN, HORTICULTURIST, EXPERIMENTAL FARM, OTTAWA.

DURING the past 16 years more than 400 named varieties of strawberries have been tested at the Central Experimental Farm, Ottawa, under as nearly uniform conditions as possible. Every year many new varieties are offered for sale, some at very high prices. It has been the aim to test these alongside older varieties and find out whether they are any better. Ninety-five per cent. of the varieties introduced every year are inferior to the best varieties already grown.

Many kinds are discarded at the farm every year, having been tested long enough to judge of their merits. In 1904 there were 196 varieties tested. As the average results are more conclusive than those for a single year, the following 12 varieties, which have averaged best for four years, are those which would be likely to prove most productive when the conditions are the same as at Ottawa, the soil being a rich sandy loam not lacking in moisture.

Most productive 12 varieties in order of merit:

1. Mele, Perf. This is a wonderfully productive berry, but being rather soft is not highly recommended. Fruit above medium size, roundish or pointed conical, pale but glossy red. Quality medium.

2. Sample, Imp. The Sample is undoubtedly one of the best commercial strawberries on the market. It is very productive, handsome and uniform in shape. Fruit large, bright to rather deep glossy red, and moderately firm. Season medium to late, quality medium.

3. Buster, Imp. Although not generally known, the Buster is another fine variety. It is very productive, and the fruit, which is large, maintains its size well to the end of the season. The color is pale, glossy red, much like Clyde in appearance. Moderately firm; quality above medium; season medium to late; foliage very good.

4. Bisel, Imp. This variety has been lost sight of to a large extent owing to so many new and much advertised varieties being given such prominence, but it is one of the most productive and handsomest berries tested at Ottawa. It is a superior variety. Fruit large, roundish, bright red, moderately firm. Quality above medium; season medium to late.

5. Afton, Imp. Can see no difference between this variety and Warfield.

6. Steven's Early, Imp. Appears identical with Warfield.

7. Glen Mary, Perf. The Glen Mary has for years been one of the most productive varieties at the Central Experimental Farm. It combines great productiveness with very large size of fruit, the fruit remaining large until the end of the season. Fruit very large, rather irregular in shape, bright red, moderately firm; quality medium; season medium. The irregularity of the fruit is somewhat against it.

8. Daisy, Imp. The Daisy is a variety which was sent to the experimental farm for test 16 years ago and has always proved exceedingly productive. Fruit above medium size, uniform in shape, round-conical, rather soft, bright glossy red. Quality medium; season medium. A very attractive berry but a little soft.

9. Greenville, Imp. This variety has proved very productive here, and on account of its good quality is very desirable for home use as well as market. Fruit large to very large, roundish or wedge shaped, moderately firm to rather soft. Quality good; season medium. More suitable for near than for distant market.

10. Daniel Boone, Imp. This variety appears identical with Warfield.

11. Howard's No. 41, Imp. A firm, productive, medium to late variety with medium sized deep red fruit.

12. Enhance, Imp. This is another variety which has not received the attention it deserves. Fruit above medium to large, roundish, deep red, firm. Quality above medium to good; season medium. Should be an excellent variety for shipping long distances.

Warfield, Imp. While the Warfield comes thirteenth in order of productiveness, it may deserve fifth place if the Afton, with which it seems identical, is the same variety. The Warfield is one of the very best of the older varieties, being very productive and of an attractive, deep glossy red color. It is one of the best varieties for canning. The foliage is inclined to rust sometimes, which is somewhat against it. Quality medium. Season early to medium.

Others which closely follow the above are Marie and Beder Wood, the latter being one of the best all-round early perfect varieties. For home use would suggest Bubach, Greenville, Lovett and Beder Wood as among the best. Williams, which is probably grown more than any other variety for long distance shipment, came twenty-ninth in the four years average. It is one of the best for this purpose, but Enhance should be given a further trial.

Strawberries succeed best on rich, well drained soil which will not bake easily. Thorough preparation and heavy manuring will give best results. Seldom, if ever, are strawberries too heavily manured. There are many systems of growing plants, but for those who are not strawberry specialists, and even in most cases for those who are, the matted row is the best. Plant early in spring when the soil is ready, setting the plants 18 inches to 24 inches apart in rows three and a half to four feet apart. Give thorough cultivation during the growing season. The looser the surface soil is kept the better the results will be.

Place the runners, if possible, so that they will be evenly distributed in the row. If the plants are kept at least six inches apart the results will usually be better than if closer. Mulch lightly just before winter sets in and after the ground is frozen with coarse straw or marsh hay. Frequently this will save the plants in thawing and freezing weather without snow on the ground, when otherwise they would be killed. Remove mulch in spring before plants begin to grow and place between the rows. It may smother the plants if left too long.

PRUNING FRUIT BUSHES

H. S. PEART, B. S. A., O. A. C., GUELPH, ONT.

AMONG the things that should occupy the attention of the farmer and fruit grower one of the first in importance is the pruning of his fruit trees and bushes. In the farmer's garden the bush fruits are very generally neglected, though the pruning which they require is simple in nature and can be done with comparatively little labor. The following directions may serve as a guide for some who have bushes to prune this spring:

The pruning of raspberries may be summed up briefly as follows: Remove the old canes after fruiting; thin out the weakest of the new canes so that the row may not be too thick; head back the new canes to about three and one-half feet, so that good strong lateral shoots may be developed near the ground. Strong laterals may be headed back about one-half. In some localities where there is danger of the canes being injured during the winter, it may be best to leave the pruning until spring, but where there is no danger of injury from frost the work is as well done in the fall.

Blackberries or thimbleberries should be pruned much the same as raspberries except that the new canes should be left somewhat longer, four to four and one-half feet being considered about right. It is generally advisable to prune blackberries in the early spring, as the canes are liable to freeze back during the winter.

GOOSEBERRIES.

Without care gooseberries become a tangled mass, which prevents the proper development and the easy harvesting of the crop. The fruit is borne on one, two and three-year-old wood, mostly, however, on the one and two-year-old wood. The aim should be to replace the three-year-old branches with good healthy new shoots very early each season. Six main branches, two of which may be replaced annually, is a good base from which to build the frame of the bush. Head back the new growth about one-third and keep the bush just open enough to permit the easy harvesting of the fruit. If opened up too much there is danger of the fruit being injured by sun-burning.

Currants are borne on the short spurs arising from the old wood, and near the base of the new shoots. Two-year-old canes produce the finest quality and the largest quantity of fruit, although some fine berries may be produced on the three-year-old branches. Train the bush to six main stems, two of which may be removed each season and replaced by two vigorous young canes. All other new canes arising from the ground should be removed. Head back the two new shoots about one-half and all other branches one-third. Keep the head of the bush open enough to permit the free circulation of air and to admit sufficient sunlight to ripen the fruit properly.

The treatment of black currants does not materially differ from that of reds. The fruit is borne on one-year-old shoots arising from older branches. As the bushes grow larger and stronger than the reds, it is well to leave about eight canes, renewing two each season. Head back the growth severely to encourage the formation of many new spurs from the old wood for the produciton of fruit. Leave the head open enough to permit of free circulation of the air and the entrance of sunlight to the centre of the bush.

This Berry Needs a Trial

PROF. H. L. HUTT, O. A. C., GUELPH.

I have been thinking of planting Lucretia Dewberry, and if so of trellising them. Would it be a more desirable variety than Erie or Kittatiny ?—(W. O. Burgess, Queenston, Ont.

I would not advise planting largely of Lucretia Dewberry until you have given it a trial on your soil. It has done well here, although none of the blackberries are very satisfactory in this section. At A. E. Sherrington's Experiment Station, Walkerton, Lucretia has done very well, but I am doubtful if it would be as profitable as some of the best blackberries, such as Kittatiny, Agawam, or Eldorado. Your best plan would be to get a few plants and give them a thorough test along with the varieties of blackberries mentioned.

Pedigreed Strawberry Plants

E. B. STEVENSON, PONSONBY, ONT.

As a result of experiments with many different varieties of strawberries I can recommend the following varieties:

List for growers and season of fruiting.

Extra Early and Early Kinds.—Excelsior, Success, VanDeman, Michel, August Luther, Cameron's Early, Palmer, Monitor, Johnson's Early, Beder Wood, Clyde, Sampson, Lord Sheffield, Texas.

Mid-Season.—Bubach, Haverland, Lyon, Splendid, Marie, Bismarck, Tennessee Prolific, Ruby, Glen Mary, Saunders, Sample, Williams, Wm. Belt, Lount, Senator Dunlap, Miller, Brandywine, Emperor, Nick Oliver, Mrs. Fisher, Woolverton, Parson's Beauty, Minuteman.

Late to Extra Late.—Joe, Klondike, Gaudy, Lester Lovett, Nettie, Robbie, Timbrell No. 18.

From the foregoing list growers can choose the kinds best suited for their soil. I would caution them to beware of the seller of pedigree plants who makes extravagant claims. Pedigree applies to highly bred animals in one continuous line for many years. Very many of our best strawberries are chance seedlings, found growing in fence corners, on stone heaps or in places frequented by birds that feed on berries.

Many people do not know how strawberry plants are propagated, and are deceived by the man who claims his plants are pedigreed (which claim he makes for the sole purpose of selling) and that they are superior, which is a great mistake. I once obtained some of these pedigreed plants, and when they came I discarded a good many. I called them runts, and the ones I planted did not do as well, by any means, as my own plants. This pedigree business is a great fraud worked on unsuspecting growers.

Diseases of the Grape

DISEASES of the grape was the subject of Mr. W. T. Macoun's remarks before the Niagara Peninsula Fruit Growers' Association at their meetings in March. The diseases described in detail were the black rot and brown rot or downy mildew, for which spraying with the Bordeaux mixture was prescribed; powdery mildew, the remedy for which is dry sulphur; anthracno or bird's eye rot, which has appeared in the eastern part of the province but is not very prevalent; and leaf blight, for which Bordeaux mixture is the remedy.

Last season many buyers would only buy grapes grown on clay soil, and the question arose whether those grown on sandy soil are more subject to disease. Last year, Mr. Macoun said, he visited Mr. W. H. Bunting's vineyards at St. Catharines, which had been sprayed seven times, and the grapes were almost perfect. He saw another yard of 15 acres which had not been sprayed, and there was not a good bunch to be found. This proved the advantage of spraying in the vineyard.

Cultivation of Carnations

"I GET the best results with carnations by keeping them inside," remarks Mr. A. Neal, Stratford. "I start the cuttings and keep them moving to larger pots frequently, never allowing them to become root-bound. When grown in this way they can be put in the benches a month or six weeks earlier than when grown outside. Then I am sure of a good crop of bloom for the Christmas market, which is always wanted. The main object is to keep them growing continually from the time they are rooted until they are in bloom.

"When grown outside they should be set out as soon as danger of frost is past. Keep them well watered and well cultivated so that they will not receive a check. After about three months, or about the middle of August, I put them back in the benches, and if everything has been favorable get a crop of bloom by Christmas. Sometimes, however, weather conditions are such that I miss the Christmas trade by putting them out. Besides there is a more abundant bloom of much finer quality with most varieties when grown inside. The best commercial varieties with me are Lawson (cerise), Enchantress (pale pink) and Queen Louise (white)."

After the welcome bloom of the tulips has gone, if you planted deep, leave them and cultivate over them. If not, take them up and heal them in the ground, out of the way, until they ripen. Then break off stems, dry like onions and store for next fall.

ORNAMENTAL SHRUBS

PROF. H. L. HUTT, O. A. C., GUELPH.

OF late years there has been considerable inquiry regarding the most desirable shrubs for lawn planting. The answer to such a question depends on the locality, as there are a number of very desirable kinds which can be grown in the southern sections of the province but which would not do at all for the north or east.

We have had an excellent opportunity on the college grounds of studying a large number of the more hardy kinds and are pretty safe in saying that what are hardy enough to do well here will do well over the greater part of the province.

Philadelphus Coronarius

From careful observations for 10 years I would select the following as a dozen of the best hardy ornamental shrubs from among about 200 species and varieties which have been planted here. The list is given in the order of their season of bloom and covers the season fairly well from the earliest bloom in the spring till frost destroys the last in the autumn:

Forsythia suspensa (Golden Bell). An open, spreading bush about six feet in diameter. Flowers large golden bells, an inch or more across, appear before the leaves, about the end of April, and last about three weeks; very showy.

Ribes aureum (Golden Currant). A very hardy vigorous growing bush about six or eight feet in diameter. Flowers golden yellow, very abundant, and having a delightful spicy fragrance. In bloom May 9 and lasts two weeks.

Pyrus japonica (Japan Quince). A showy bush six or eight feet in diameter, with glossy green foliage. Half hardy when young, but after a time becomes acclimatized and quite hardy. Flowers large and brilliant scarlet, some varieties pink and white. In bloom about May 15 and lasts nearly three weeks.

Caragana frutescens (Siberia Pea Tree). A very hardy showy little bush about five or six feet in diameter. Has a luxuriance of fine light green foliage, which appears early and is followed about May 24 with an abundance of clusters of pea-shaped yellow flowers. Bloom lasts a little over a week.

Syringa vulgaris (in variety, Lilacs). The common lilac is so well known as not to need description, and is appreciated by all who grow it. There are a great many improved varieties, with single and double flowers, varying in color from white and pink to dark purple. In bloom about May 24 and lasts for two weeks or more. Some of the Chinese and Japanese species are very desirable and extend the season of bloom to July 1.

Pyrus angustifolia (Bechtel's double-flowered American Crab). This is a crab apple tree of medium size, and very hardy. Four years after planting it began to bloom and bears large double pink flowers an inch and a half in diameter. At a distance they look like small roses and are very fragrant. In bloom about June 1 and lasts about two weeks. These handsome flowers make such dainty buttonhole bouquets that on public grounds, such as ours, the tree becomes the prey of all bouquet lovers.

Spiraea Van Houtei (Van Houtte's Spiraea). This is one of the best of the spiraeas. It makes a graceful, symmetrical little bush about five feet in diameter, with slender drooping twigs. The bloom is pure white, very profuse, appears the first week in June and lasts about two weeks.

Virburnum opulus sterile (Snow ball). This is a hardy free-growing shrub, about ten feet high, which bears large round clusters of pure white flowers, which look like snowballs. In bloom about June 4 and lasts over two weeks.

Lonicera tartarica (Bush Honeysuckle). A very hardy symmetrical bush 10 feet or more in diameter. Has an abundance of bloom every year, which appears the first week of June and lasts about a week. The bloom is followed by showy red or orange fruits which make the bush attractive long after the bloom is gone. There are red, pink, and white varieties, all of which are worthy of a place on the lawn. Good varieties may easily be grown from the seed.

Diervilla rosea (Rose colored Weigela). This is a handsome bush which is only half-hardy here when young, but becomes hardier with age. It makes a bush five or six feet in diameter. The flowers are large and bell-shaped, appearing among the foliage the first week in June and lasting nearly three weeks.

Philadelphus coronarius (Garland Syringa). A hardy vigorous bush about 10 feet in height, bears large white fragrant flowers like orange blossoms. In bloom about June 15 and lasts over two weeks.

Rhus Cotinus (Purple Fringe or Smoke Tree). A hardy, thrifty shrub which grows 10 or 12 feet high and makes a shapely bush. About the middle of July it comes in bloom and from that till autumn it is covered with curious fringe or plume-like flowers, which are very showy.

Lonicera Tartarica

Hydrangea paniculata grandiflora. A somewhat straggling growing shrub, which may become six or eight feet high, but is better when pruned back severely every spring, the same as roses. It bears large panicles of white flowers. In bloom about the middle of August and lasts three or four weeks.

Planting Peonies

PEONIES are raised in a very simple way. Any loamy land, good enough for corn or vegetables, will do for peonies. Plow two furrows deep and set the plants quite closely together. Fertilize the land at least one season before planting. Never under any circumstances put manure or other fertilizer directly under or among the roots at the time of planting.

September is the best time for planting, but they can be moved up to November or very early in April, before the spring growth begins. If the planting is left until autumn a whole year's root grow h, as well as a season s blooming, is lost. Full grown prize flowers must not be expected the first season. The plant needs two or three years in which to get well established and do its best. The time of blooming varies considerably with the different varieties.

CHRYSANTHEMUM WORK FOR APRIL

GEO. HOLLIS, BRACONDALE, ONT.

CHRYSANTHEMUM cuttings for exhibition purposes should be taken during March or even earlier, although they can be taken in April, as a long growing season is required to develop a good stem and a large flower. Should you decide to try some of the novelties, your order should be placed at once, as the growers start shipping as soon as danger from frost is over. By ordering now you can top your new cuttings, and in this way increase your stock before planting time arrives.

In growing chrysanthemums, for either exhibition or commercial use, the secret of success is to never let them get a check from the time of taking the cuttings to flowering time. The method generally used is to place some clean, sharp sand in a bench or flats about three inches deep, in a temperature of 55 or 60 degrees, shaded from the sun, and to keep the sand rather wet. Select the best cuttings, which should be strong and not hard wooded, and in two or three weeks the cuttings should be rooted. Remove them from the cutting bench, shake the sand from the roots, and pot in small pots. The soil should not be too rich at first. Shade from the sun for a few days, but afterwards give them a sunny position and lots of air. In about two weeks they should be shifted into three-inch pots, and by the second week in May they should be ready to plant in the bench, or, if they are to be grown in larger pots, a larger pot will be required.

If grown for cut flowers the main lot of cuttings need not be rooted before May first, but if short of stock, root all the cuttings you can get. When they are large enough, take the tops and root them.

STANDARD VARIETIES.

The following is a list of standard and tried varieties:

White.—T. Eaton, W. H. Chadwick, Western King, Mrs. H. W. Buckbee, Mrs. Nathan Smith, Convention Hall, Kalb.

Pink.—Dr. Enguehard, Mrs. H. Flick, Marie Liger, A. J. Balfour, Wm. Duckham, Marion Newell.

Yellow.—Golden Wedding, Golden Chadwick, Yellow Eaton, Mrs. Thirkell, Percy Plumridge, Cheltoni.

Red.—S. F. Wright, Lord Hopeton, G. W. Childs, Harrison Dick.

GOOD POTTING SOIL

WM. HUNT, ONT. AGRI. COLLEGE, GUELPH.

LATE autumn or early spring is the best time to make the compost heap. An excellent method of securing a good pile of potting soil is to obtain some good tough sod from an old well fed down pasture field, where the soil is of a loamy nature. Cut the sod about four inches thick and stack it in the open where it will be fully exposed to the weather.

Place the first layer of sods with the grass side downward. On this place another layer of sod, grass side downward, as before after which spread on a layer of well rotted stable manure or cow manure, to the depth of three or four inches. Repeat with two layers of sod and one of manure until the pile is large enough. Build the pile upright and keep it perfectly level until finished.

It will take eight or ten months for this material to rot sufficiently for use in potting plants. When it is ready cut down from top to bottom with a sharp spade, as required. The proper proportions of soil and manure to make a good rich compost may be obtained in this way. This soil will make a good compost for bulbs, roses, geraniums and the more common plants. For begonias, fuchsias and the more tender plants, or for sowing seeds in, about oneseventh part of fine sharp sand may be mixed with the potting soil. Cover the pile of potting soil lightly with brushwood to keep away chickens or animals.

In country places or on farms there should be no difficulty in securing a pile of potting soil. In towns or cities it would, perhaps, be better and cheaper for the plant grower to buy a bushel or two of prepared potting soil from a florist.

Good, sweet, fresh, potting soil is one of the main essentials in floriculture. The soil should be sifted through a sieve having a three-quarter inch mesh, so as to remove any sticks or stones before using it. The fibry matter and the rotten manure should be all passed through the sieve to mix with the soil.

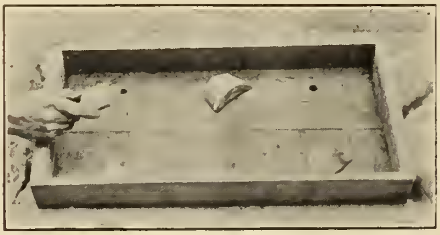
I have known amateur plant growers pack the sod and manure, as described, in an old box or packing case, and by this means secure a good quantity of potting soil. This compost would also be very useful to market gardeners for use in hot beds. One layer of sod to three or four of manure would probably be a better proportion for raising early vegetable plants.

STARTING ANNUALS

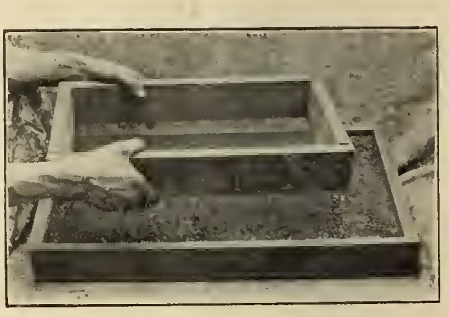
W. G. ROOK, TORONTO, ONT.

THERE are several flower seeds which can be sown indoors during April. Nearly all annuals may be bloomed at least one month earlier by starting them now. For the amateur who has not the convenience of a greenhouse or hot-bed, windows with a southern exposure may be used for the boxes in which the seeds are sown.

Obtain shallow boxes about three inches deep and small enough to lift easily. Should it be desired to plant more than one kind of seed in a box, partitions may be inserted. Bore holes in the bottom, about six inches apart, for drainage. Partly cover the holes with concave pieces from a broken flower pot. Take the coarse material which cannot be run through a sieve and make a layer, about half filling the box. Spread over this soil that has been made rich with manure or fertilizer and sifted. Press the soil firmly with a piece of board, after which the seeds may be sown.



Showing Box and Method of Drainage



Sifting in the Fine Earth

They should be covered with soil to about four times their diameter, the large ones about half an inch deep, and the very fine ones hardly more than below the surface. There are seeds so fine that sowing them on the surface is sufficient. Some people prefer sowing the seeds in rows one inch or more apart, others sow them broadcast. Do not neglect pressing down the soil firmly with a board both before and after sowing. This is very important.

Moisten the soil with a bulb sprayer. Care must be taken to have the box flat and not to give too much water at once, so as to avoid washing out the seeds. Always keep the soil moist. Should it become dry after germination begins the plants will never fully recover or be as healthy as if properly cared for.

Pressing Down the Soil

Mark each box with a label giving the name of the variety and date of planting. When seedlings show their first pair of leaves developed and the next pair started they should be transplanted to give more root room. Boxes such as have been used to sow seeds in will be the best, or seed pans, flower pots, or any other article of a similar nature, will do.

Seedlings should be lifted carefully and the soil around their roots not broken. Take the plant between the thumb and finger of the left hand, and with a small stick make a hole in the soil deep enough to cover the plant close up to the leaves and press the soil firmly around the roots. Give a light sprinkling with water, and shade for a few days until the roots begin to grow and the plants stand up, after which place in the strong sunlight. Turn the box every few days as the plants always grow towards the light. When the bright warm days come the boxes should be placed outside during the day to harden the plants before they are planted in the garden.

THE SHAMROCK IN IRELAND

HORTUS SYLVA.

SINCE Victoria of Blessed Memory proclaimed the wearing of the green on the 17th of March all classes and conditions of people try to get a shamrock to wear on that day. It makes very little difference to the wearer of the shamrock what the plant is so long as it has a three divided leaf. Many varieties of plants are sold as the "rale true shamrock of Ould Ireland," and the less they know about it the more positive they are of being in possession of the real shamrock.

No doubt the plant that St. Patrick used to illustrate the doctrine of the Trinity is lost in antiquity, and at best we can only conjecture as to the plant he used for that purpose. Much has been written in the past, some writers holding to one plant and others just as positive to some other. It would not be time lost to refer to some of the plants that have occupied a prominent place in those discussions. Botanical history throws some light, and is more reliable to guide us than folk lore or legends. White clover has often been referred to, in fact the writer once had a sod of clover given him that was brought from Ould Ireland as the real true Irish shamrock. The white or Dutch clover was not introduced into Ireland till about the 16th century, more than a thousand years after St. Patrick had passed to his rest, so white clover must be discarded.

Oxalis Acetosella, or Wood Sorrel, is a plant growing in the woods all over Ireland from time immemorial. Being common it is considered a weed, but it is a lovely little plant. There are two species, the white and the yellow flowered. The plants resemble each other very closely, but Stricta has yellow flowers two to six on each peduncle, the foliage being of a pleasing green color. Acetosella has white flowers on a single scape; the foliage is of a reddish green color.

In some parts of Ireland the peasants

make quite a little money by the sale of seed and plants. One tourist describes their method thus: They stand a plant in a large tin pan; when they touch the long shaped pod it bursts open, scattering the seed. The seed is gathered and put up in packets and sold to tourists for 62 cents.

A VARIETY OF CLOVER.

Trifolium Minus, a variety of Trifolium Repens or white clover, has been sold by seedsmen as the shamrock, also Trifolium Procumbens, the low hop clover. The Medicago Lupulino, or black medick, is another claimant for the distinction. The English and Irish have the trefoil figured on their coins.

Brewer's Dictionary of Phase and Fable says: "So far as I nave been able to find the shamrock is not mentioned by Shakespear. Under the word "clover" the author of Plant Lore of Shakespear says of the clover there are two points of interest that are worth notice. The clover is one of the plants that claims to be the shamrock of St. Patrick. This is not a settled point, and at the present day the wood sorrel is supposed to have the better claim to the honor, but it is certain that the clover is the club of the pack of cards. Clover is a corruption of clava, a club. In England we paint the clover on our cards and call it clubs, while in France they have the same figure, but call it trifle. It is certainly curious, says one writer, that the trefoil in Arabic is called shamrock, and was held sacred in Iran as emblematic of the Persian triads.

Pliny in his Natural History says that serpents are never seen on the trefoil, and it prevails against the stings of snakes and scorpions. If such were the case no more suitable emblem could have been chosen by St. Patrick, seeing that he is said to have driven such hideous reptiles from the Emerald Isle. This tradition makes it even doubtful if the whole thing is not a myth.

"The dear little sweet little shamrock of Ireland
Thrives only on starvation.
Good food, justice and kindness kills us all."

FLOWER GROWING ON AN EXTENSIVE SCALE

When Mr. John H. Dunlop, of Toronto, commenced growing flowers in an amateur way, in 1880, with a modest greenhouse six by twelve feet, none of his friends expected that within 25 years he would become one of the leading professional florists in Canada. Yet that is what he has done. From this small beginning Mr. Dunlop has succeeded in adding to his business year by year until he has the second largest floral establishment in Canada and one of the largest on the continent. His greenhouses number 36 and cover about four acres of land. There are 150,000 square feet of glass in his greenhouses.

So well known has Mr. Dunlop's establishment become it is considered one of the sights of the city by many amateur and professional florists who visit Toronto. One of his recent visitors was an editorial representative of The Horticulturist, who was entertained in a most interesting manner by a trip (it was nothing less) through the various greenhouses. Believing that time is money Mr. Dunlop has planned his greenhouses so that no time need be lost visiting any section of them. The office and work rooms are located in the center and are thus convenient to all tne greenhouses.

The first greenhouses entered from the office were two, 140 feet long each, devoted to the growing of Meteor roses. "This is one of the most productive varieties," said Mr. Dunlop, "but it is giving growers considerable trouble as it seems to be deteriorating. Of late years we have been forced to graft it on the Manetti. Its splendid crimson color and its productiveness are its strong points. Until this year I have been unable to equal it in this respect, but now the General McArthur and the Richmond promise to excel it on both points and on odour as well. The odour of the General McArthur is very sweet. The great productiveness of the Meteor will be realized when I state that one year the 1,400 plants in this house averaged 33 blooms each.

"One of the strongest points in favor of the McArthur and Richmond varieties is that they do not require as high a temperature by six or seven degrees as the Meteor, which needs a temperature of 65 degrees at night. The Richmond is being sent out this season for the first time. I heard it so highly spoken of last fall I visited the greenhouses of the originator, in Richmond, Indiana, specially to see it. We have grown the General McArthur all season and find it a favorite variety, its fragrance adding to its popularity."

On coming out of the first two greenhouses the representative of The Horticulturist became interested watching one of Mr. Dunlop's employes grafting Bride and Bridesmaid roses. "My method," said Mr. Dunlop, "is to use Manetti stocks, which are imported from England in the fall. These are potted and kept in a cool greenhouse till after New Year's. Some of them are then brought into a warmer house to start growth. The scions are splice grafted on the Manetti and placed in a close grafting frame. For the first 10 days this frame is kept perfectly tight at an average temperature of 80 degrees. For the four following days about half an inch of air is admitted. For the next two days an inch of air is given, and then four inches of air is allowed in for two days. At the end of 16 days the plants are given full ventilation and they are ready to be moved at the end of 18 days. This method greatly increases the strength of the plants." Some plants, pointed out by Mr. Dunlop, which had been treated in this way, bore evidence to the truth of the statement.

"One of the greatest stumbling blocks many growers encounter," continued Mr. Dunlop, "is to retain the original foliage of the American Beauty rose after the process of rooting till growth starts. I have found that it is best not to vary the temperature during the four weeks the cuttings are in the sand. The cuttings are even potted in the propagating house. They are kept in the house where the grafting frames are until growth starts, after which little difficulty is experienced with them."

The next greenhouses visited were seven in one, there being no partitions between them. These greenhouses, which were 240 feet long, presented a lovely scene, as they were full of rose plants, many of which were in bloom. The first two houses were devoted to American Beauty roses and the remainder to

Monster Combined Greenhouses Where Mr. Dunlop Grows Some of His Roses such varieties as Bride, Bridesmaid and Franz Deegan. The benches were of modern construction, being about a foot high and made of cement, brick and tile. "The strong points of these benches," said Mr. Dunlop, "are their durability, their free drainage, and that the soil can be kept at a more even temperature.

"I like this method of throwing several houses into one, as when the gutters are high the light goes right through the houses and none of the plants are shaded. This year I am taking down four old houses and converting them into three large ones, in which I will use the skeleton construction."

POPULAR VARIETIES.

On being asked how many varieties of roses he was growing Mr. Dunlop replied, "I am growing 10 varieties and find the white, pink and red are the most popular in the order given. There are none better than Bride and Bridesmaid in the white and pink. Franz Deegan has supplanted Perle in the yellow. The Richmond, I believe, will excel all others in the red."

Mr. Dunlop Among His American Beauty Roses

Two propagating houses are used exclusively for carnations. At the time of the visit these were being used for chrysanthemums and violets. During their season Mr. Dunlop propagated about 150,000 carnation cuttings. The cuttings are kept in for about five weeks and are kept very cool, being given but little bottom heat in the belief that plants grown in this way are more sturdy and have a better constitution. The bench bottoms are composed of slate and soft brick and about two inches of sand, which gives a better temperature and more even moisture, as the soil does not dry out so quickly as it otherwise might.

The two adjoining houses are used for propagating roses and the sides for lily of the valley. The lillies of the valley are grown from pips imported from Germany between November and January. On arrival they are placed in cold storage and are brought out as needed. Many of the plants in these greenhouses were beauties, having made a splendid growth. Radium and Multibelle are two of the best varieties Mr. Dunlop grows.

Five greenhouses were visited in which asparagus plumoses was growing, some of the plants in one of the greenhouses were 14 feet high. In five other greenhouses, 140 feet long, were growing Bride, Bridesmaid and Kaizerin roses.

WHERE CARNATIONS BLOOMED.

A most enjoyable part of the visit was spent in the greenhouses devoted to carnations, seven of which are 240 feet long by 18 to 21 feet wide. "In white carnations," said Mr. Dunlop, "Lady Bountiful, White Lawson and The Belle are among the best. Glacier is an old standby which is still good. The Harlowarden is the best of the deep shades.

"In the bright reds Estelle, Adonis, Flamingo and Cardinal are of about equal merit. The last is a new variety this year which promises well. Among the dark pinks there is nothing to beat Mrs. T. W. Lawson. The Mrs. Lawson is one of the best varieties ever originated. It is a very free bloomer, of large size, and has a good stem. It has all the points of a perfect flower."

The plants in two of the carnation houses had never been in the field, and the plants, in consequence, have fine long stems early in the season. In one of the houses the carnations had been taken out and 50,000 young plants put in instead, which will be left in until the last of April or first of May. When the plants are young they are pinched back to induce them to make side breaks and develop into bushy plants.

THE CUT BLOOM CELLAR.

A most interesting feature of this big establishment is the cut bloom cellar, which is eight feet deep. The walls are 18 inches thick and made of hollow brick with four inch spaces. There is a nine-inch arch roof with three wooden roofs over that with four inch spaces between each roof. There are double windows, which are double glazed, to let in the light and exclude the atmosphere. The cellar never has any frost or artificial heat. Cut flowers look better 48 hours after being placed in the cellar than when they are cut. They are shipped to such distant points as Winnipeg and Halifax and reach their destinations in excellent condition.

In addition to growing flowers Mr. Dunlop conducts two retail flower shops in Toronto, which do a big business. His ability as a florist has often been recognized by his brother florists who have at different times elected him to such important offices as president of the Canadian Horticultural Association, Toronto Gardeners' and Florists' Society, vice-president of the American Carnation Society, and many others. Any person interested in the growing of flowers will find a visit to Mr. Dunlop's greenhouses both pleasant and profitable.

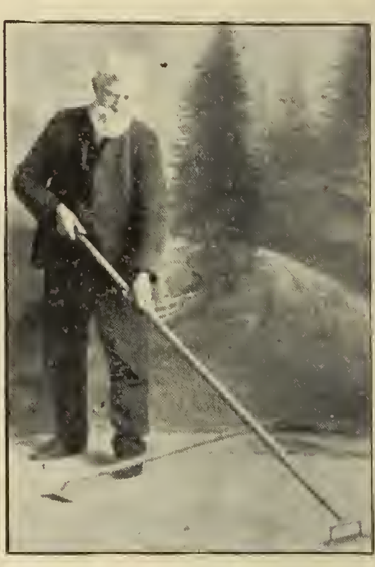
One of the Greenhouses in Which the Mrs. T. W. Lawson Carnation Is Grown

ANOTHER HANDY GARDEN TOOL

WILLIAM WELCH, KINCARDINE, ONT.

THE description which appeared in the March issue of The Horticulturist of Mr. R. B. Whyte's flower garden in Ottawa was an instructive one for amateur flower growers. I was particularly interested in Mr. Whyte's description of the two handy garden tools he uses in weeding his garden. A number of years ago I realized the need for some such implement as those used by Mr. Whyte, as I found it was difficult to keep my garden free from weeds either by pulling them by hand or by using a hand hoe. This led me to experiment, with the result that I finally devised an implement which has been of great assistance to me and with which I find it possible to weed my garden quickly and effectively and without stooping or soiling my hands, two things to which so many people object.

The first implement I made was rather a crude affair, as the blade I shaped myself, but since then I have been able to improve it considerably. It may be used by pulling, or pushing for stirring the surface of the soil. The trouble I found with a hoe was the continued lifting and hacking. So satisfactory have the results been with the use of this implement that I have introduced it to my friends, who have been delighted with its use. Both amateur and professional florists who have used it have informed me that it has been of great assistance to them in not only weeding their orchards and gardens, but in stirring the soil as well.



Death on the Weeds

This illustration shows how Mr. Welsh, the president of the Kincardine Horticultural Society, uses his weeder.

HYBRIDIZING CARNATIONS*

GEORGE HOLLIS, BRACONDALE, ONT.

I GROW quite a few carnations and chrysanthemum seedlings every year and so far have met with some success. I hope to get higher up the ladder before I give up and should like to see more growers take up this work. In Canada we should be able to do something to hold up our end and bring out a variety that will be a credit. Raisers of seedlings must not be disappointed if they do not get anything good the first, the second or even the third year. After that they should have some success.

The plants raised the first year should be the foundation of the seedling stock. The color of the flowers does not matter much, provided the plants are strong, with thick flower stems and an upright growth, the calyx never bursting, and the flowers not very full in petals. Select the plants you mean to seed, and take the pollen from some healthy strong growing plant, never from weak, puny ones. Nothing is gained by getting new ones to work with, unless some new variety should give you some advantage in vigor, size and bloom. With good judgment and selection it is better to work with seedlings.

The dull days of winter are not so easy to cross the flowers as the warm bright weather of early summer. Many of the varieties have no pollen till warm weather. Having selected the blooms you wish to seed, take out the pollen anthers before they burst. The petals should not be cut off, and two days after the pollen can be put on the pistil, bringing it to the flower with a pair of small forceps. Do this about noon, when the sun is shining, and if successful the blooms will close by the next day. If not successful repeat. After a few days pull the dead petals out.

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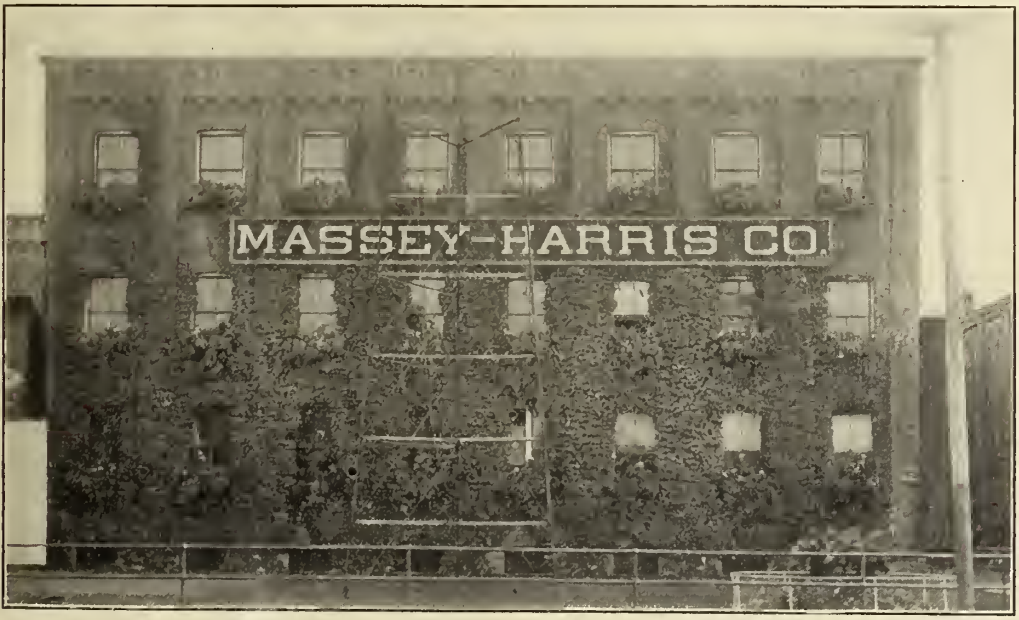
* Paper read before Toronto Gardeners' and Florists' Association, March 21, 1905.

Some varieties will not seed, but the pollen from them, in nearly every case, is wonderfully effective. Label your crosses and keep an eye on them. When the seed pods show signs of bursting gather and put each in separate papers, and keep them in a tin box in a cool dry place, till sowing time, which I think is best in February. The seedling can be grown on in pots or flats and planted outside in May. Do not stop the seedlings. Let them flower, and do not be afraid to pull out the bad flowers or the poor growers. After planting outside you will have more to pull out. Out of 500 you may end with 12 or less.

Cross them, sow, select and house as before, and propagate any you think are worth saving. They may be good as seedlings, but when grown from cuttings they may be far from good. Carnations, as grown for cut flowers, have practically no rest. A cutting cannot, in any sense, be called a new plant, as it is only a branch, so to speak, of the new plant, and if ever propagated or badly treated a good kind may soon be ruined. Seedlings of extreme vigor are what are wanted. Propagated and grown with care, when put on the market, they should keep in health and vigor for many years.

The last two years I have lost nearly all my seedlings through their being flooded when planted outside, and this year I have to work up a new stock. I am using some singles, which I hope will give me some vigorous plants to seed next year. Some growers think the use of singles is going backwards, but in my opinion that is not the case. There are some grand varieties sent out this year, but there is room for something better.



A Beautiful Object Lesson For Large Manufacturing Companies

The unattractiveness of many commercial sections of cities has been greatly relieved of late years by the planting of vines and window boxes. During the summer this Toronto building is always greatly admired.

GROWING EARLY TOMATOES

J. L. HILBORN, LEAMINGTON, ONT.

FOR the best success in growing early tomatoes for market it is necessary to have a greenhouse in which to grow the plants. There are about 30 of these in the vicinity of Leamington, which are used almost entirely for the growing of tomato plants.

We start the seeds in flat boxes made one by two feet and four or five inches deep. We sow the seeds the first or second week in March. When the plants have developed four to six rough leaves they are pricked out into other flats in rows two or three inches apart each way. They are grown here until they begin to crowd each other, when they are again transplanted into flats which are divided into spaces about four inches square by using veneer partitions. The plants are grown in these until they again begin to crowd, when they are transplanted and given a space six inches each, which gives six plants to a tray where the trays are used.

Some growers use other forms of trays and some use square veneer boxes 5 x 5 or 6 x 6, but all use some form of box so that they can transplant into the field without disturbing the roots. We set the plants four by six feet and cultivate and hoe often until the fruits begin to ripen.

Last season we trimmed about 3,000 plants, allowing but two stems to grow. These were tied to stakes and suckers were kept off. Where this was practised a much finer quality of fruit was obtained, but it was hardly so early in ripening and the yield was lighter. The most serious hindrance to the success of this industry that we have to contend with is the great quantity of cheap imported stock that is found on the market when ours are being harvested.

VARIETIES OF VEGETABLES FOR A HOME GARDEN

PROF. H. L. HUTT, ONTARIO AGRICULTURAL COLLEGE, GUELPH.

THE following varieties of vegetables should give excellent satisfaction when grown in the home garden:

Beans.—Summer, Golden Wax; autumn, Burpee's Bush Lima; winter, Navy. Sow when danger of spring frost is past.

Beets.—Globe, Egyptian Turnip; long, Long Smooth Blood. Sow as soon as ground is fit to work. Thin when small to three inches apart and take out every other one as soon as they are large enough to use.

Carrots.—Chantenay, Scarlet Nantes. Sow early and thin the same as beets.

Cabbage.—Early, Winningstadt; late, Flat Dutch, Savoy; red, Mammoth Rock. Sow seed of early variety in hot-bed about middle of March and transplant to open ground about end of April. Sow seed of late varieties in the open ground about end of May, and transplant about July 1.

Cauliflower.—Extra Early Erfurt, Early Snowball. Treat the same as cabbage.

Celery.—Early, White Plume; medium, Paris Golden Yellow; late, Giant Pascal. Sow seed in seed box or hot-bed about first of May. Prick out into flats or cold frame, when an inch high, and transplant into trenches four or five feet apart about July 1.

Corn.—Early, White Cory; medium, Metropolitan; late, Country Gentleman, Stowell's Evergreen. Sow about May 1, and if plants are injured by cold or frost sow again about May 24.

Citron.—Colorado Preserving. Sow in hills about eight feet apart when danger of frost is over.

Cucumber.—White Spine, for slicing; Cool and Crisp, for pickling and slicing. Sow in hills about four feet apart when danger of frost is over.

Egg Plant.—New York Improved. Sow seed in seed box or hot-bed about middle of April, and transplant in the open when danger of frost is past.

Kohl Rabi.—Early Purple Vienna. Sow seed early for summer use and again about middle of June for winter use.

Lettuce.—Toronto Gem, California Cream Butter. Sow seed as early as possible, and at intervals of a month for succession. Thin plants to six or eight inches apart for good heads.

Muskmelon.—Rocky Ford, or Emerald Gem; Montreal Market. Sow seed in well prepared hills when danger of frost is past.

Onions.—Yellow Danvers, Prizetaker, Red Wethersfield. Sow seed as early as possible. The thinnings may be used as green onions.

Parsnips.—Hollow Crown. Sow as early as possible and thin to six inches apart in row. Leave part of the crop in the ground over winter for spring use.

Peas.—Early, Steel Briggs' Extra Early; medium, Gradus; late, Champion of England. Sow early kinds as early as possible and others a couple of weeks later.

Potatoes.—Early, Early Ohio; late, Empire State. Keep potatoes for planting in a warm room in the light for three weeks before planting. Plant a few for early use as soon as the ground is fit to work, and follow with others when danger of frost is past. Plant late varieties about May 24.

Pumpkin.—Sugar. Plant when danger of frost is past.

Radishes.—Early, Rosy Gem, French Breakfast; winter, Scarlet China. Sow early varieties as early as possible, and at intervals of two weeks for succession. Sow winter varieties in summer after crop of early peas.

Salsify.—Long White. Sow as early as possible and thin to four inches apart in the row. Part of the crop may be left in the ground over winter for spring use.

Spinach.—Victoria. Sow as early as possible, and at intervals of a month if succession is desired.

Squash.—Summer, Crookneck, White Bush Scallop; winter, Hubbard. Do not plant until danger of spring frost is over. Bush varieties require about four feet of space between hills. Hubbard should have at least eight feet.

Tomatoes.—Early, Spark's Earliana, Dominion Day, Mayflower. Sow seed in seed box or hot-bed about the middle of April. Transplant in the open when danger of frost is past.

Turnips.—Golden Ball, Hartley's Bronze Top. Sow early for summer use and about June 20 for winter use.

Vegetable Marrow.—Long White Bush. Plant when danger of frost is past.

Watermelon.—Hungarian Honey, Cole's Early. Plant when danger of frost is past in well prepared hills eight feet apart.

If you care to start a hot-bed, or a cold frame for flowers, all right. If not, scatter the seeds thinly on a bare piece of ground, even if the frost is not all out, and when the plants have four or five leaves on them they can be readily transplanted to beds. Take up a small clump of earth with each plant, and do not disturb the roots. Poppies bloom very early, asters later, so that if you plant poppies in one row in the bed and asters a foot apart behind them, when the asters are ready to bloom the poppies will be gone and you can weed them out.—(N. S. Dunlop, Montreal, Que.

A good garden requires good soil. Sandy land is the earliest. It can be made productive by the addition of plant food. Commercial fertilizers are good in their place, but they do not make humus, which comes from decayed vegetable or animal matter.

Onion Growing For Profit

JOSEPH W. RUSH, HUMBER BAY, ONT.

What is an average profit per acre growing onions, all expenses being deducted ? Is it difficult to dispose of the crop and how much per bushel do onions generally bring ? Have you tried the transplanting method introduced by T. Grenier in his book, The New Onion Culture ? Is it advisable to keep onions until spring ? What kind of soil is best and what onions are the most profitable ? How many bushels can be grown from an acre ?—(A. R. Douglas, Ailsa Craig, Ont.

There is certainly money in onion growing if properly managed. Try it and manage as well as you can. The returns from an acre of onions may range from $20 less than nothing up to $300 to the good. There is always a sale for onions at market prices which range from 50 cents to $1 per bushel for well dried onions. A good plan for early onions is to sell them in bunches, six onions tied in a bunch. The onions should be three to five inches in diameter. They sell at 50 cents per dozen bunches in Toronto market.

Sell the onions when they are ready and you need the money. My soil includes sand, heavy clay, black muck, clay loam, gravelly clay and some very strong land. The Yellow Danver onion I find the most profitable and I always use a well known Toronto firm's seeds. Sow five to six pounds per acre. Four hundred bushels is a fair crop, 600 bushels is a good one. There is lots of work in onion growing, and you should find a profit as well as work.

THE BEST SOIL.

The soil best suited for onions is a dark, sandy loam that retains moisture. Work deep when preparing the ground for the reception of the seed. Use land that has been worked for a root crop the previous year. Use 30 to 40 tons of well rotted barn manure per acre and plow it under four to six inches. The manure should be covered by not less than four inches of soil.

Harrow thoroughly so that the manure is thoroughly incorporated with the soil. After harrowing with the ordinary harrow the surface should be further worked with the arm or disk harrow, so that it is well pulverized to the depth of four inches. Then put on the smoothing board and go over the ground two or three times until you are sure the soil is ready for the seed. When ready make a straight mark across the land to be sown, have your seed in the drilling machine and set the marker to suit. If the crop is to be worked by hand 15 inches will be about right, and if by horse 18 to 20 inches.

Run the drill at a good fast walk, as the seed runs truer than when run at a low speed. Have the heaviest man on the farm follow the drill, treading every inch of the rows thoroughly to insure a good catch. There is no other crop where the adage, "A Stitch in Time," is so applicable as in the onion crop; therefore, just as soon as the line can be seen, which will be about 10 days after sowing, apply the double wheel hoe between the rows and keep it going once a week all season. Do not thin the onions, as they will ripen better if allowed to crowd each other.

Experiment in Pruning Tomatoes

W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA.

AN experiment in pruning tomatoes was tried last season with gratifying sucsults. When the plants in the hot-beds had six strong leaves developed, which was on May 23, the tops were nipped off and the plants given more room, being placed five and a half inches apart in the frame. The object of pinching off the top of the plant was to cause new shoots to develop at the axils of the leaves in order to have six branches bearing early tomatoes instead of the one cluster usually found on the top of the plant. These were planted out June 6, alongside other plants unpruned. On June 22 half the pruned plants were again pruned, all laterals being taken out and the six main branches only left. The other plants were left to grow at will, and it was found that they produced the most ripe fruit, though not the largest early crop.

This system of pruning is very promising. The further advanced the axillary shoots are when the plants are set out the larger the early crop is likely to be. In the experiment the plants were not started early enough to get the best results. When the first fruit was ripe on the unpruned Sparks' Earliana, July 29, there was very little ripe on that date. The experiment was suggested by Mr. J. S. Littooy, Everett, Washington Territory, who has been pruning tomatoes in this way for some time in Washington with gratifying results, where they have difficulty in ripening tomatoes.

Two varieties were under test, the Sparks' Earliana, one of the best, if not the best, early variety, and the Matchless, a main crop sort. I would advise all market gardeners to give this system a trial this year.

Name of Variety.	Date of First Ripe Fruit.	Ripe Fruit First Three Pickings.	Total Yield of Ripe Fruit.	
Sparks' Earliana:		Lbs.	Lbs.	Ozs.
Unpruned	July 29	9	84	10
Pruned once . ..	Aug. 13	6	127	12
Pruned twice ...	Aug. 12	18	132	12
Matchless:				
Unpruned	Aug. 4		29	
Pruned once	Aug. 29		73	8
Pruned twice ...	Aug. 29		62	

Better to Mix the Fertilizers

W. C. M'CALLA, ST. CATHARINES, ONT.

I GREW six acres of tomatoes last year, but the season was so unfavorable I was not able to see definite results from the different fertilizers tried. It rained so much at planting time that it took a week to get all the plants out, and a week's start gives a very considerable advantage. In a large field the soil is not uniform, and in a wet season particularly, it is not fair to compare the lower ground with higher. I am still satisfied, however, that for tomatoes, and for some other crops, it pays to use chemical fertilizers, and I should not like to be without a few sacks each season, even if I could get all the stable manure I wanted.

This fertilizer question is an important one. There is still prejudice against commercial fertilizers, largely, I believe, because of lack of knowledge. I have no record of definite, detailed results from the use of commercial fertilizers, although I have used them on a number of crops each year, and after watching their effect have gradually increased my purchases each season. I have no great knowledge of farm chemistry, but have read and studied the subject as I found time, and have attained some measure of success in the use of fertilizing chemicals. As a result I have about given up using ready-mixed fertilizers, finding it cheaper and better to buy the ingredients separately and to mix them as the land and crops seem to require.

Vegetable Notes

Too much nitrogen in the soil, or rather not enough phosphoric acid and potash for the amount of nitrogen will cause the first fruits of cucumbers or tomatoes to drop.—(W. W. Hilborn, Leamington, Ont.

The soil for growing celery can hardly be made too rich. Celery is a great consumer of nitrogen. Potash must be abundantly supplied to give strength for bleaching and keeping. It is one of the great secrets of success with this crop.

Maine is the champion potato state, with a yield of 200 bushels to the acre. New Hampshire is next with 145 bushels. New York is the lowest with 86 bushels. Iowa is the champion of the western states with 118 bushels. It is also the champion corn state.

The Canadian Horticulturist

The Only Horticultural Magazine in the Dominion.

OFFICIAL ORGAN

ONTARIO FRUIT GROWERS' ASSOCIATION.
THE POMOLOGICAL AND FRUIT GROWING SOCIETY OF THE PROVINCE OF QUEBEC.
PRINCE EDWARD ISLAND FRUIT GROWERS' ASSOCIATION.
ONTARIO VEGETABLE GROWERS' ASSOCIATION.

H. Bronson Cowan, Editor and Business Manager.
J. J. Bell, Associate Editor.
W. G. Rook, Advertising Manager.

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3. **Remittances** should be made by Post Office or Money Express Order, or Registered Letter. Postage Stamps accepted for amounts less than $1.00. Receipts will be acknowledged on the address label, which shows the date to which subscription is paid.

4. **Discontinuances**—Responsible subscribers will continue to receive The Horticulturist until the publishers are notified by letter to discontinue, when all arrearages must be paid. Societies should send in their revised lists in January: otherwise it will be taken for granted all will continue members.

5. **Change of Address**—When a change of address is ordered, both the old and the new addresses must be given.

6. **Advertising Rates** quoted on application. Circulation 5,500. Copy received up to the 24th. Responsible representatives wanted in towns and cities.

7. **Articles and Illustrations** for publication will be thankfully received by the editor.

8. **All Communications** should be addressed:

THE CANADIAN HORTICULTURIST,
507 and 508 Manning Chambers,
TORONTO, CANADA

THE CANADIAN HORTICULTURIST.

That Canadians, who are interested in the growing of fruit, flowers and vegetables, are prepared to support a Canadian publication which is devoted to their interests is proved by the rapid growth that has taken place in The Canadian Horticulturist. The great increase in the subscription and advertising patronage has made it possible to issue this number under a new cover and to enlarge the magazine from fifty-two to sixty pages. During March, handsome and enlarged offices were secured in the Manning Chambers, Toronto.

The best evidence of the increase in the support of the paper is afforded by its subscription lists and advertising pages. During the past few months two provincial fruit growers' associations have appointed The Horticulturist their official organ, and others intend to do so shortly. The number and value of the advertisements has been increasing by leaps and bounds. The February issue, 1905, carried more advertisements than any previous issue. The advertisements in the March issue showed an increase in value of eleven per cent. over the February issue. This month the advertisements in The Horticulturist have surpassed those in the March number by almost thirty per cent., and are worth as much as the total advertisements in the twelve issues of the magazine published during 1902. Can any other publication in Canada show a more rapid increase in the same length of time?

This increase will soon make it possible to considerably enlarge the paper and to strengthen all the departments. Many improvements are being planned which when carried out will make The Horticulturist a magazine of which Canadians may well feel proud. As such progress as has been made, is due to the assistance of our readers and advertisers, the management trusts it will continue to receive this support in the future as in the past. In the meantime a cordial welcome is extended to our readers, one and all, to visit us in our new home in the Manning Chambers, where lovers of horticulture are always assured of a warm welcome.

GOOD RESULTS SHOULD FOLLOW.

The announcement, by the Hon. Sydney Fisher, Minister of Agriculture, that in compliance with the requests of fruit growers he may arrange for the holding of a conference by representatives of the fruit interests in the different provinces, has been received with general satisfaction by fruit growers at large. Such a conference has long been needed. There are questions relating to the transportation and marketing of fruit, uniform packages, the Fruit Marks Act, etc., which are pressing for a solution and these can best be dealt with by a conference such as is proposed. Important results will follow the meetings.

The Minister of Agriculture is, also, to be congratulated on the passage of his bill making the 10 x 11 x 22-inch box the standard for Canada. This size is the one most generally acceptable. The adoption of this box will bring about several improvements connected with the shipment of a certain class of Canadian fruit.

OUR CORELESS APPLE ARTICLE.

In this issue Prof. John Craig, the well known authority on horticultural subjects, gets after the people who are interested in the Spencer Coreless Apple, as well as Mr. Sampson Morgan, for writing the article on this apple which appeared in our last issue, and The Horticulturist for publishing it. By implying that The Horticulturist lent itself to "foisting on a gullible public" something which "may prove a fake," Prof. Craig takes a stand which is not justified. Before publishing the article in question The Horticulturist considered the matter carefully. While realizing many of the weak points in the article, which are pointed out by Prof. Craig, our intention was to draw editorial attention to them in this issue. This would have been done in the March number but for lack of space and the late date on which the article was received.

It is well known that seedless apples have frequently been produced. Proof of this is furnished in the article in this issue by Mr. W. T. Macoun. Mr. Sampson Morgan is a well known English writer on horticultural subjects, articles by him appearing frequently in some of the most conservative English horticultural publications. A contribution on this subject by Mr. Morgan, which appeared recently in The Nineteenth Century and After attracted a great deal of attention. When Mr. Morgan stated definitely that "over 2,500 trees of the Spencer apple are in hand" The Horticulturist concluded he must have proof for this statement, and, therefore, felt free to publish it although holding Mr. Morgan responsible for its truth. Mr. Morgan has been written to and will have to make his own defense. Should it be true that 2,500 of these trees exist there is no reason to doubt that there will soon be a large increase in the production of these apples. The excitement these apples created in Great Britain and the large sums they realized when sold by auction were items of interest The Horticulturist felt perfectly justified in presenting to its readers.

The Horticulturist has no intention of misleading its readers on this or any other subject. For this reason we do not hesitate to publish Prof. Craig's letter in full. It is published with pleasure because we understand from other sources that Prof. Craig has excellent reason for speaking as he has. The statement has been made to The Horticulturist that a company is being formed in the United States with the intention of selling nursery stock of so called coreless apple trees to the public at exorbitant prices. If this is the case the sooner the warning to the public is sounded the better. While The Horticulturist intends to keep its readers informed on matters relating to seedless or coreless apples it will also use its best efforts to prevent their being misled by sharpers. It is now up to Mr. Sampson Morgan to explain his position.

THE FRUIT DIVISION.

Until he has produced stronger reasons than those given in the House of Commons, Hon. Sydney Fisher will find it impossible to convince fruit growers of the necessity which led him to place the chief of the fruit division under the direction of the Dairy Commissioner. In taking such action the Minister of Agriculture has given fruit growers reason to believe that he does not consider it necessary to consult their views in affairs connected with his department, no matter how interested in them they may be. More than that ; he has shown fruit growers that he does not intend to pay any heed to their wishes as expressed through their provincial fruit growers' associations, through papers representing their interests and by means of private letters, many of which he has received.

Hon. Mr. Fisher has not claimed that the Dairy Commissioner (who is a recognized authority on dairy matters) is better informed in regard to the fruit interests than is the chief of the fruit division. Such a claim would be ridiculous. Why then should the latter be placed under the direction of the former ? This, however, is not a question of the fitness of these two men for the work. There is a principle at stake which demands recognition, and that is that the fruit industry is of sufficient importance to require a head who shall not occupy a minor position to the head of any other branch of the department of agriculture. As the Hon. Mr. Fisher does not recognize this fact it means that the fruit growers of Canada must produce the proof and that is what they intend to do.

OUR TEN DOLLAR BONUS.

The successful winner for March of the $10 offered by The Horticulturist each month to the reader who buys goods to the greatest value from the advertisers in each issue was Mr. Lewis Miles, who purchased trees and vines to the value of $126.25 from The Belleville Nurseries, of Belleville. Among those who applied for the bonus was Mr. G. H. Mills, of Toronto, who secured goods to the value of $87.50 from the Steele, Briggs Seed Co., Limited, of Toronto. As a reward The Horticulturist is sending Mr. Mills a handsome premium.

Owing to the large number of applications that are received for this monthly bonus it has been decided to make a change in the method of its distribution starting with this month's issue. In future, instead of giving one prize of $10, this sum will be divided into six prizes, one of $5 and five of one dollar each. The largest sum will be given to the reader whose purchases aggregate the most, and the remaining five prizes to the applicants in the order of the value of their purchases. Should there be more than six applicants those who do not receive money prizes will be sent handsome premiums. A notice concerning this offer appears in our advertising columns.

It is understood that City Park Commissioner Chambers, of Toronto, purposes making a change in the management of the Allan Gardens. Such action will meet with the approval of many who have felt for a long time the injustice of one man being paid for work another man was doing. The Allan Gardens, while under the control of the city of Toronto, might almost be called a provincial or Canadian institution, as they are visited by lovers of flowers from all parts of Canada. It is only justice that the man responsible for the splendid appearance of the gardens and grounds should receive full credit for his work. It is time, also, that Toronto had new conservatories. They are needed and should be built.

THE VEGETABLE GROWERS HAVE ORGANIZED

The vegetable growers of Ontario have organized and formed the Vegetable Growers' Association of Ontario. Organization was completed at a representative meeting held in Toronto March 25. Those present included Messrs. W. C. Emory, Aldershot ; E. J. Mahoney, Hamilton ; W. C. McCalla, St. Catharines ; A. McMeans, Brantford ; J. Terrill, Picton ; W. Carter, Dovercourt ; Joseph Rush, F. F. Reeves, Humber Bay ; John McKay, Doncaster ; George Syme, jr., Carlton West ; R. Lankin, Toronto ; J. W. Hyatt, West Lake, Ont.; H. D. Anderson, Dresden ; John F. Atkin, Sarnia ; Mr. Porter, York ; P. W. Hodgetts, secretario Ontario Fruit Growers' Association, and H. B. Cowan, of The Horticulturist.

Mr. G. A. Putnam, Supt. of Farmers' Institutes, addressed the meeting and offered to assist the vegetable growers of the province every way in his power. Speakers would be sent by the department to their meetings, and he was willing to assist in the work of organization.

A report of a sub-committee which had been at work drafting a constitution was presented by Mr. Cowan, and after careful consideration was adopted with one or two amendments. The preamble states :

"The object of the association shall be the advancement of the science and art of vegetable growing, in all its branches, by holding meetings for the discussion of questions relative thereto, and by collecting, arranging and disseminating useful information, and by such other means as may from time to time seem desirable."

Local associations may be formed in any part of Ontario and their membership fee shall be one dollar a year. Their annual meetings must be held during December of each year. Each local association has the right to appoint a director to the board of the provincial association and shall hold office for one year. Associations may be formed with ten members. The provincial association will pay the expenses of one director from each association having a membership of 25 or over, when attending meetings of the provincial board. Associations having a smaller membership than 25 may elect a director but must pay his expenses. Each director will have a vote on the provincial board for every 25 members in his local association. The directors will elect from among themselves a president, vice-president and secretary-treasurer.

Local associations will send the secretary of the provincial association fifty cents for each of their members, which will constitute the members of the local association's members of the provincial association, shall entitle them to free copies of the official organ of the association, to free copies of the report of the annual convention, and such other printed material as may be issued by the provincial association. The Canadian Horticulturist was appointed the official organ of the association. Individual growers not connected with local associations may join the provincial association by sending one dollar to the secretary of the provincial association.

OFFICERS ELECTED.

On motion those present at the meeting were elected provisional directors until the local associations can elect directors regularly at their annual meetings next December. Associations already in existence but not represented at the meeting will be allowed to elect provisional directors to the provincial board.

The election of officers resulted in Mr. W. C. Emory being selected as president; Mr. Jos. Rush as vice-president, and Mr. H. B. Cowan as secretary-treasurer. These officers were appointed a committee, with power to add to their numbers, to wait on the Hon. Nelson Monteith, to ask for a grant for the association ; that the Provincial Fruit, Flower and Honey Show shall be extended to include vegetables, and that the experts at the agricultural college be asked to devote more attention to matters pertaining to the growing of vegetables. The meeting was an enthusiastic one. Those present dispersed feeling that the new association has possibilities for splendid work ahead of it. Copies of the constitution adopted may be had on application to The Canadian Horticulturist. An organizer may be placed on the road to form local associations.

COOPERATIVE WORK AMONG FRUIT GROWERS

P. W. HODGETTS, SEC'Y ONTARIO FRUIT GROWERS' ASSOCIATION.

A strong deputation representing the cooperative committee of the Ontario Fruit Growers' Association waited on the Hon. Nelson Monteith, Minister of Agriculture, early in March, to impress on him the necessity for assisting in every way the cooperative movement among the fruit growers. There were president Messrs. A. E. Sherrington, of Walkerton ; Robt. Thompson, of St. Catharines ; A. W. Peart, of Burlington; W. A. Ross, of Chatham; Mr. Johnson, of Forest ; Elmer Lick, of Oshawa, together with President Alex. McNeill and the secretary. A strong statement as to the losses sustained by the fruit growers under the present system of selling the crop was presented to Mr. Monteith, together with a brief account from each of the cooperative associations represented, as to the benefits which had accrued to their members the past year when prices were low.

As an aid to the successful carrying on of this work in the future, it was suggested that the department might revise and extend the present "Act for the Incorporation of Cooperative Cold Storage Companies" so as to include cooperative packing companies. This extension would also assist financially in the purchase, erection and equipment of suitable buildings for storage or packing purposes to the extent of one-fifth of such cost.

Two other suggestions were made, one asking that a number of power sprayers be operated this year throughout the province ;

the other that expert packers be sent this fall to the various districts to teach the Ontario packers the proper methods of grading and packing fruit in either boxes or barrels.

Mr. Monteith expressed himself as being much impressed with the necessity for such a line of work among the farmers and promised to do all in his power along the lines suggested.

A STANDARD APPLE BOX ADOPTED

The bill promoted by Hon. Sydney Fisher, providing for a uniform sized apple box, which has passed its third reading in the House of Commons, meets the views generally of fruit growers and exporters. The standard size provided for is 10 x 11 x 22 inches, inside measure, or 2,200 cubic inches. It holds one bushel and is equivalent to one-third of a barrel.

Mr. David Henderson, M. P., put in a plea for a box 9 x 12 x 18 inches, one quarter of a barrel, which is the size used in the county of Halton, which he represents. Mr. Claude Macdonell presented the views of some Toronto shippers, favoring the size proposed for shipments to Great Britain, but smaller sizes to South Africa, France, Germany and other countries where different sizes are preferred, but the uniform size was adopted. The act will not come into force till June, 1906, so that this year's trade will not be affected.

The Fruit Growers' Associations of Ontario, Quebec, Nova Scotia and British Columbia passed resolutions in favor of a uniform box of the size which has been incorporated in the bill.

That the fruit growers are in favor of a standard box will be seen by the following expressions of opinion, a few of many given to The Horticulturist:

It is a step in the right direction to have a legal box, for we will be able to get sale quotations based on the legal box and it will give us a more intelligent view of market situations. —(Harold Jones, Maitland, Ont.

It is a mistake to have different sizes in boxes. In the past we have not known where we were at. The size adopted is the right one. —(S. M. Culp, Beamsville, Ont.

I approve of Hon. Sydney Fisher's resolution respecting apple boxes. There ought to be some standard size and the boxes should be of good timber, well seasoned.—(R. A. Thomas, Barrie, Ont.

A standard size for apple boxes is all right. The boxes should be of No. 1 timber. A box shown at the Toronto exhibition had sides only half an inch thick, which is too thin for exporting. A square box of the same size would be stronger and better. However, I prefer the barrel to the box.—(Rd. Veale, Mount Brydges, Ont.

A Series of Instructive Meetings

The Niagara Peninsula United Fruit Growers' Association strengthened itself among the fruit growers of the Niagara district as a result of the series of meetings under its auspices during the second week of March. The meetings were held at Stoney Creek, Beamsville, Jordan Station, Queenston and St. Catharines. Two meetings were held each day, and the attendance and interest were well sustained. Mr. C. M. Honsberger, president, and Mr. C. E. Fisher, secretary, made the necessary arrangements. The subjects specified on the program were San Jose scale work, diseases of the grape, and cooperation and organization among fruit growers. In addition to well known local fruit growers, such as Messrs. W. H. Bunting, E. D. Smith, A. H. Pettit, Erland Lee, S. H. Rittenhouse, W. C. McCalla, L. Woolverton, Joseph Tweddle, R Thompson, H. Griffith, S. M. Culp, W. H. Lee, F. A. Goring, F. G. Stewart, Rev. W. J. Andrews, Isaac Usher, Wm. Armstrong, Chas. Lowrey and W. M. Hendershot, two outside speakers, Prof. Lochhead, of Guelph, and Mr. W. T. Macoun, of Ottawa, divided the meetings, dealing chiefly with diseases of the grape.

Mr. A. N. Brown, an extensive and experienced fruit grower of Wyoming, Delaware, was present at the meetings and spoke twice daily, his addresses being full of interest and instruction. He is a many-sided man of pleasing address, and won golden opinions from those with whom he came in contact.

Arrangements have been made by the association to supply members with spraying materials at wholesale rates. There can be no excuse for neglect in the matter of spraying this season.

The Deseronto Workers.—The season of 1904 was one of the most successful in the history of the Deseronto Horticultural Society. The annual flower show given by this society is becoming one of the events of the year, and the last show held was the largest and best ever given. The competition in classes for best kept lawns and grounds was keen, and great interest aroused. Prospects for the coming season are good, as the members are anxious to make an even better record than the past year. Mr. D. McClew was re-elected president and Mr. R. W. Lloyd as secretary.

The premiums distributed this year by the Durham Horticultural Society will consist of fruit trees, evergreens, flowering shrubs, gladioli and geraniums. The members of this society are taking more interest in their surroundings than heretofore, and much rivalry is expected in competing for prizes for the best kept grounds and lawns of the members. The membership is constantly increasing and the society is a power for good in this community.—(Chris. Firth, Sec'y.

A Dominion Convention

A deputation of fruit growers waited on the Hon. Sydney Fisher to ask him to call a Dominion convention for the purpose of discussing various matters connected with the fruit growing industry, also to urge him to take steps to have express rates placed under the control of the Railway Commission. The deputation was an influential one and placed its views before the minister with much force.

The following were mentioned as some of the subjects which might be discussed at the convention :

Statistics and fruit crop reports.

Transportation.

Uniform packages.

Markets and marketing, including the regulation of the commission business, and all questions pertaining to interprovincial trade, also the export trade.

Adulteration of fruit products.

Regulation of nurseries and tree agents.

Amendments to the fruit marks act.

Suggestions looking to the increasing usefulness of the Dominion experimental farms and provincial experiment stations and orchards.

The deputation met with a sympathetic reception and Mr. Fisher expressed himself favorable to holding the convention. It is expected that representative fruit growers, representatives of the transportation companies, local and foreign buyers, and others more or less directly connected with the industry will be present, and that an exhibition of fruit, representative of the provinces, will be held at the same time.

Items of Interest

A very successful banquet was held by the Market Gardeners' Protective Association at Toronto March 1. The principal speakers were Hon. N. Monteith, Minister of Agriculture ; Mr. J. W. St. John, M. P.P., and Messrs. R. C. Steele, W. Rennie, J. A. Simmers and H. B. Cowan. The affair passed off very pleasantly.

A number of fruit growers' cooperative associations have been formed in Ontario as the result of a series of fruit institute meetings. Among those associations are the Bruce Fruit Growers' Association, Thedford Association, Forest Fruit Growing and Forwarding Association, Georgian Bay Fruit Growers' Association, Lake Huron Fruit Growers Association, and Allenford Fruit Growers Association.

At a meeting of the British Columbia Central Farmers' Institute, held at Victoria February 28 to March 2, a resolution was passed unanimously endorsing the action of the Provincial Board of Horticulture in refusing admission to the province of fruit and fruit trees infected with fungus disease and infested with insect pests.

An influential deputation, introduced by Hon. J. S. Hendrie, M. P. P., waited on Hon. Nelson Monteith, Minister of Agriculture, recently, to urge the holding of the annual Fruit, Flower and Honey Show at Hamilton. A deputation is being formed in Toronto to wait on the minister and ask that the show shall be continued in Toronto.

New Advertisers

The following advertisements appear in this issue of The Canadian Horticulturist for the first time :

Sinclair, D. J., Toronto, Ont.
MacLean Publishing Co., Toronto, Ont.
Welsh, W., Kincardine, Ont.
Kastings, W., Buffalo, N. Y.
Niagara Gas Sprayer, Buffalo, N. Y.
Smith, J. B., Strachan ave., Toronto, Ont.
Stone & Wellington, Toronto, Ont.
Blackie Bros., Halifax, N. S.
Massey, Harris & Co., Toronto, Ont.
Renfrew Nurseries, Renfrew, Ont.
McMillan Fur and Wool Co., Minneapolis, Minn.
Indianapolis Nurseries, Indianapolis, Ind.
Banfield, H. G., Woodstock, Ont.
Breckon, T. W., Merton, Ont.
United Typewriter Co., Limited, Toronto.
Vanduzer, C. W., Grimsby, Ont.
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Trade With Grocers

The keener the demand, the better market. This is a truism that is not amiss to repeat once in a while. Fruit growers as a general thing ship to jobbers, who in turn sell to the retail fruit dealer or grocer. There are, however, many buyers among both jobbers and retailers who are anxious to get in touch with large shippers and who are ready to take good sized shipments regularly—ready to pay, too, a better price than the market for a dependable article. Some of these buyers are in Eastern Canada and some are west. An excellent means of reaching them is by advertising in a newspaper which they consult for market quotations, etc. Such a newspaper is The Canadian Grocer, published in Montreal, Toronto and Winnipeg. The Canadian Grocer enjoys the name of being the best news medium of the green fruit trade, as this relates to green fruit as merchandise.

Our Reputation Is Extending

"The reputation of Canadian fruit is apparently extending to all parts of the world," said Mr. Stone, of the firm of Morris & Wellington, whose nurseries are at Fonthill, while in conversation recently with The Horticulturist. "We have lately received an order from a party living at Kuanguing, China, for several hundred dollars' worth of fruit trees, including apples, pears, cherries, plums, peaches, apricots, ornamental stock and an assortment of small fruits and roses. The check paying for the consignment accompanied the order.

"It may be interesting to readers of The Horticulturist to note that the climate of Manchuria is not unlike that of the Niagara district, as it seldom goes lower than 10 below zero and as high as 100 degrees in summer. Our firm has previously shipped to such foreign points as Great Britain, France, Germany and Russia, but this shipment to China is the most foreign we have ever made, as well as being one of the best orders of the kind received from any foreign customer. The purchaser of this stock intends experimenting with these trees, and as splendid pears have been grown very successfully in Manchuria he is hoping to branch out extensively in the fruit line. The consignment was shipped by C. P. R. to Vancouver, where it will go straight to Shanghai, and thence forward to New Chwang, Manchuria."

The Value of a Tree

Trees are valuable from every standpoint. Railroads taking planted lands often pay $30 to $300 each for trees occupying the land, and there have been instances where $600 in cash was paid for trees standing on condemned property. It pays to plant trees—all kinds of trees—fruit, shade and ornamental, and when laying out parks, public and private grounds, windbreaks for farms, shelters and belts for landscape effects, there is one indispensable class, namely, the evergreens. They include

STRAWBERRY RASPBERRY

SMALL FRUIT PLANTS
GARDEN ROOTS

Gooseberries—Josselyn, Red Jacket, Downing, Pearl and Houghton. $1 per doz., $6 per 100; $2.50 per doz., $10 per 100.
Currants, Black—Lees' Prolific, Champion, Naples. $1 per doz., $6 per 100.
Currants, Red—Moore's Ruby, Childs' Ruby, Red Cherry, Victoria, Varsailles. $1 per doz, $6 per 100.
Currants, White—White Grape. $1 per doz., $7 per 100; 50c per doz., $2 per 100.
Raspberries—Miller, Cuthbert, Japanese Mayberry. $1.50 per doz., $10 per 100.
Black Berries—Taylor's Prolific, Snyder. 50c per doz., $2 per 100.
Grape Vines—Worden, Moore's Early, Campbell's Early, Salem, Delaware, Eaton, etc. $1 50 per doz., $10 per 100.
Strawberries—Clyde, Williams, Splendid, Saunders, etc. 50c per 100, $4 per 1000.
Strawberry Raspberry—Tree Strawberry. $3 per 100, $20 per 1000.
Garden Roots—Asparagus, Palmetto, Conovers Colossal $1 per 100 $6 per 1000, 2 yrs.—Rhubarb (divided roots), Linnaeus, Victoria, $4 per 100. $30 per 1000—Sage Roots, 50c per doz., $4 per 100.

FOR FURTHER INFORMATION APPLY TO
WM. FLEMING
NURSERYMAN
P. O. Box 54 OWEN SOUND, ONT.

some of the most useful and beautiful specimens known to horticulture—several varieties are valuable for reclaiming waste lands and some of them will thrive while less hardy trees cannot live.

At Dundee, Illinois, is the nursery of D. Hill, the evergreen specialist. For more than forty-two years Mr. Hill has turned his attention to this branch of horticulture, and in his Dundee nursery will be found all the practical varieties of these beautiful trees. His catalogue and bargain sheet will be forwarded free to any one requesting the same. Address D. Hill, Evergreen specialist, Dundee, Illinois.

Power Sprayers

The F. Hamilton Company, Limited, Hamilton, Ont., have secured the agency for Niagara Gas Sprayers, as well as the Wallace. They report that enquiries for power sprayers are coming very fast and expect a very large sale of these goods this coming month, and have already sold several.

Fruit Culture.—If you are interested in growing apples, pears, plums, grapes, strawberries, raspberries and other fruits it will pay you to send for the catalogue of Green's Nursery Co., Rochester, N. Y. It is a pamphlet of 72 pages, illustrating and describing fruit trees, plants and vines, also ornamental vines, plants and trees, and giving much information of interest to fruit growers. If requested a sample copy of Green's Fruit Magazine will also be sent. The address is Green's Nursery Co., Rochester, N. Y.

A Word to Farmers.—Farmers cannot be too particular in the quality of seeds sown. Some one has said "that a dollar saved is a dollar made," and while this may be true in many cases, yet a small saving in the price of seeds may mean hundreds of dollars lost in the crop, and very often the sowing of cheap seeds means no crop at all. The Rennie Co., of Toronto, have a reputation for good seeds. Every gardener and farmer should have their seed book.

Among the seed catalogues received by The Canadian Horticulturist is that of John A. Bruce & Co., the well known seed merchants of Hamilton, Ont. The catalogue contains a full list of the seeds, garden implements, spramotors, insecticides, poultry supplies and other garden requisites in which the firm deals. Those who patronize this old reliable firm will be well served.

The officers elected by Leamington Horticultural Society for the year are: President, A. McLachlan; secretary-treasurer, J. E. Johnson. A premium list is being arranged by a special committee appointed at the last meeting.

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THAT
SUCCEED

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All Kinds of Splint Baskets

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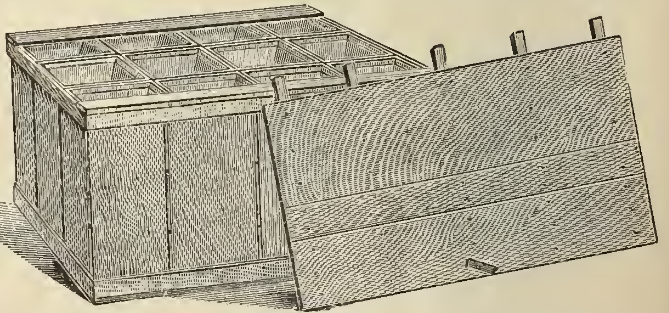
A SPECIALTY



THE OAKVILLE BASKET CO., - OAKVILLE.

A Handsome Premium will be Given Free to all Readers who buy goods from Advertisers.
See Notice in Advertising Columns.

Strawberry Plants and Seed Potatoes are the subjects of the Flansburgh & Pearson Co.'s spring catalogue, which has reached the office of The Canadian Horticulturist. The company carries on business at Leslie, Michigan, and while dealing in other lines make a specialty of strawberries and potatoes. Growers who raise these crops should secure one of these catalogues.

A New Catalogue.—Among the catalogues which have reached The Canadian Horticulturist is that of The Central Nurseries, A. G. Hull & Son, St. Catharines, Ont., growers and dealers in fruit and ornamental trees, roses, shrubs, etc. They also deal in thoroughbred poultry. This firm has been in the business for a quarter of a century and one of the most reliable firms in the Dominion. Their catalogue is very nicely printed and well worth writing for.

Write For It.—A catalogue has been received by The Horticulturist from James J. H. Gregory and Son, of Marblehead, Mass., covering the varieties of vegetable and flower seeds, bulbs, small fruits, etc., in which the firm deals. It will be sent free to anyone on application. Mr. Gregory is well known among horticulturists, being not only a seed grower and dealer, but the author of a number of works on horticultural subjects, such as Fertilizers; Onion Raising; Squashes, and How to Grow Them; Cabbages and Cauliflowers, How to Raise Them; Carrots, Mangel Wurtzels and Sugar Beets. The catalogue is well worth writing for.

Six exporters, representing the apple trade in all parts of Canada, were asked separately to name the best paying varieties of apples from an exporter's point of view. All named Baldwin and Greening, five named Spy, four Golden Russet, four King, four Ben Davis, four Canada Red, three Mann, two Cooper's Market, and one Hubbardston.—(A. McNeill, Ottawa, before Nova Scotia Fruit Growers' Association.

I am a subscriber to your excellent paper and would find it harder to give up The Horticulturist than any other of the fruit papers I read.—(R. J. Messinger, Bridgeton, N. S.

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion; minimum charge, fiifty cents.

REQUIRED BY 2 YOUNG MEN, WORK AT gardening. Five years' first class experience in England. Apply, "Benfield," Woodstock, Ontario.

WORDEN.

Fruit Trees
Ornamentals
and Vines

A full line of the Choicest Nursery Stock.

We Grow the Best, and everything True to Name.

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Good stock of first-class currants. Special lines of genuine Black Naples. Stock guaranteed to be from heavy bearing plantations. : : :

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The Easiest, Best Flavored and Largest Crops of

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Members can make their own selections
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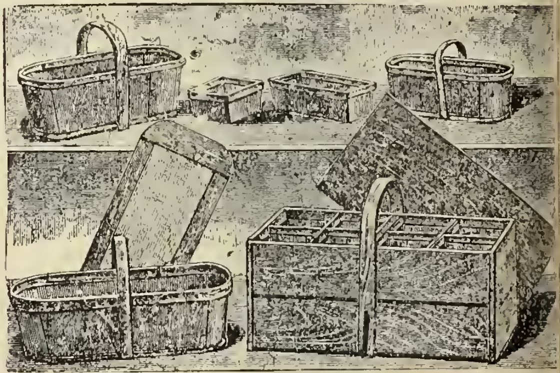
Secretaries will please write for Special Discounts

Catalogues supplied free to members.

WM. RENNIE, TORONTO.



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Manufacturer Fruit Packages,
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Why?——Why?

The question is, Why should the farmers of Ontario send their boys and girls to the

Ontario Agricultural College?

and the answer is, Because the boys will receive a practical and helpful working knowledge of Scientific Agriculture, and because the girls will be given a first-class training in Household Science at the **MACDONALD INSTITUTE.**

Residence Accommodation is provided for both men and women.

Macdonald Hall, the girls' residence, is one of the best equipped buildings of its kind in Canada, and the boys' dormitories are comfortable and commodious.

COURSES

Courses for Boys, varying from two years to four years in length, commence on September 13th.

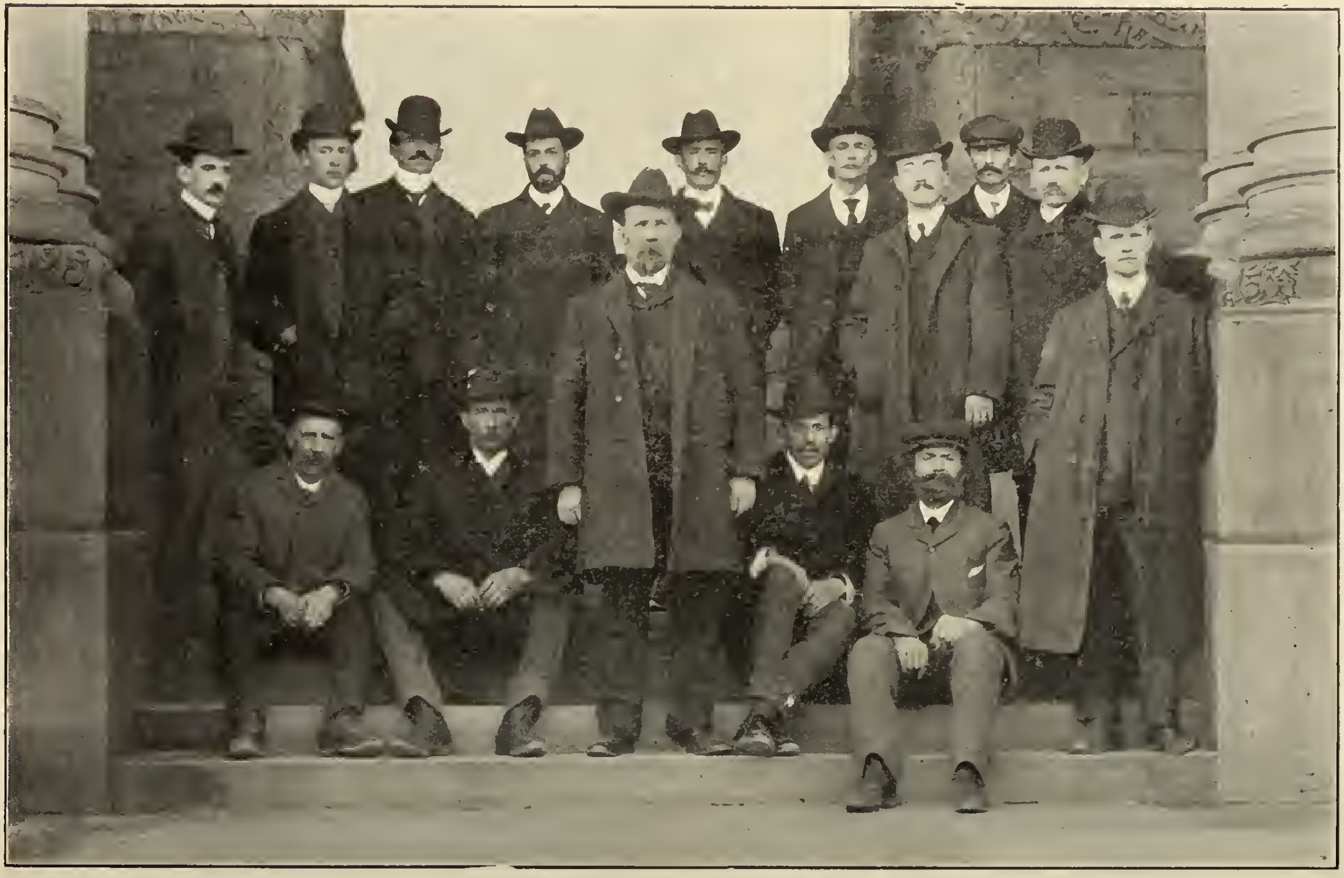
Courses for Girls, varying from three months to two years in length, commence on September 13th.

For full information regarding courses, terms, etc., write to **G. C. CREELMAN,** President Ontario Agricultural College, Guelph, Ont.

The Fonthill Nurseries ☙ **Canada's Greatest Nurseries** **Over 800 Acres in Fruit and Ornamental Trees, Shrubs, Vines and Roses.**

Send now for our catalogue of **New Specialties,** and 25c for our aluminum **Pocket Microscope,** just the thing to use in examining seeds, grains, plants and trees. Submit your list of wants for spring planting. **Liberal Inducements to Salesmen. Terms sent on application. See our reading notice page 163.**

STONE & WELLINGTON, - - - - TORONTO



Officers of the Recently Formed Ontario Vegetable Growers' Association.

The best evidence that the Ontario Vegetable Growers' Association will be a success is afforded by the class of men who are its officers, a group of whom are shown. The gentleman standing in the foreground is Mr. W. A. Emory, of Aldershot, the first president of the association. Starting with the back row from the left those shown are Messrs. P. W. Hogetts, Toronto, Secretary Ontario Fruit Growers' Association; A. McMeans, Brantford; E. J. Mahoney, President of the Hamilton Tomato Growers' Association; W. C. McCalla, St. Catharines; George Syme, Jr, Carleton West; H. D. Anderson, Dresden; J. E. Terrill, Picton; W. Carter, Dovercourt; R. Lankin, Toronto. Those sitting in the front row, starting on the left, are Messrs. F. Reeves Humber Bay, Secretary Market Gardeners' Protective Association, Toronto; John McKay, Doncaster; John F. Atkin, Sarnia, and Joseph Rush, Humber Bay, the First Vice-President of the Association. The gentleman standing on the right of the front row is Mr. G. A. Putnam, Superintendent of Farmers Institutes.

The Canadian Horticulturist

MAY, 1905

VOLUME XXVIII ❋ NUMBER 5

NEW FORMS OF KEROSENE EMULSION

FRANK T. SHUTT AND W. T. MACOUN, C. E. F., OTTAWA.*

THE value of kerosene or coal oil for the destruction of scale insects as well as for all soft bodied and sucking forms has long been recognized. It cannot, however, be used without admixture or dilution, for its high price precludes its general application on dormant wood, and its injurious action on foliage forbids its employment during the summer season.

Kerosene will not mix with water, but special pumps have been devised for throwing an atomized spray of kerosene and water, provision being made for regulating the proportion of each constituent. These pumps, however, have not proved entirely satisfactory, the difficulty, apparently, being in obtaining a spray of uniform strength.

It is as an emulsion that kerosene has been found most valuable and most widely applicable. The satisfying agent almost universally used is a soap solution, though milk and certain other fluids with more or less viscosity have occasionally been employed. It may be held that whale oil soap and soft soap so used adds to the efficiency of the resulting emulsion as an insecticide, but it seems clear that for the most part the soap simply serves as the vehicle for distributing the kerosene (the real killing agent) in a very finely divided state.

This being the case, it seems desirable to learn if other emulsifying materials cannot be used which would not only lessen the expense of the spray, but at the same time obviate the necessity of the application of heat, without which the various soap emulsions cannot be satisfactorily made. A notable advance in this direction was made last year by Professor Close, of the Delaware Experiment Station, who has published the results of certain experiments which show that lime has the power of holding kerosene in suspension and forming a perfect emulsion. Prepared according to directions, it makes a fairly stable mixture, homogeneous, *i. e.*, of uniform strength throughout, one easy to spray, and which does not clog the nozzle. Briefly described, Prof. Close's directions are as follows: mix into a "thin sloppy mass" one pound of "Limoid" (an American preparation sold for the purpose) or slaked lime with one quart of kerosene. For a 10 per cent. emulsion, two gallons (imperial measure) are added and the whole emulsified by churning for, say, five minutes, best effected by means of a pump and a Bordeaux nozzle. No free kerosene, he states, will appear for several weeks, and though there may be a separation on standing into limey layers these will readily, if stirred, again produce the emulsion without deterioration. This emulsion, known as K-L mixture, may be used with ordinary Bordeaux (K-L-B),

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*I beg to state that while I was associated with Mr. Shutt in the experiments described, to him is due full credit for the discovery of the value of flour in making a kerosene emulsion.—(W. T. MACOUN).

Bordeaux and Paris green (K-L-B-P) and resin soap.

During the past month a considerable amount of work on this and allied forms of emulsion has been done in the laboratories of the Experimental Farm, Ottawa, and though this research is not completed, it may be advisable, as we are now at the season when spraying must be more particularly attended to, to publish certain of the more important facts which the work has brought to light.

First: Freshly slaked lime makes a smoother emulsion and one that stays in suspension longer than one made with ordinary air-slaked lime; the latter, however, furnishes a satisfactory emulsion if it is not too much carbonated by long exposure to the air.

Second: By using lime slaked immediately before using, the quantity may be materially reduced. A perfect emulsion can be made by slaking half pound of good quicklime and emulsifying with one quart of kerosene and two gallons of water.

Third: By the use of freshly slaked lime less time is needed for the churning in order to bring the mass to a perfect emulsion. Much, of course, depends on the vigor used in this part of the preparation, but on small quantities two to three minutes of continuous pumping were found sufficient.

Fourth: It is not apparently a matter of much moment that the lime be dry and powdery when mixed with the kerosene. Excellent emulsions have been made both from air-slaked lime and freshly slaked lime when they have been quite moist or even made into a thick cream with water before adding the kerosene.

FLOUR EMULSION.

Fifth: Flour has been successfully substituted for lime. Beginning with the same weight as proposed by Prof. Close, viz., one pound to one quart of kerosene, which made a perfect emulsion, the amount of flour has step by step been reduced until it was found that eight ounces were sufficient to hold in perfect suspension the quart of kerosene. The preparation with flour is most simple. The requisite amount of kerosene is placed in the vessel (pail or barrel)—which is preferably dry—and flour added in the proportion stated, viz., eight ounces to one quart, the whole thoroughly stirred and the water added, two gallons for every quart of kerosene. This is then vigorously churned as already described. The time necessary to churn will vary from two to four minutes, according to the quantity to be emulsified, and the emulsion is then ready for use.

When the emulsion is required for immediate use, the quantity of flour may be further reduced. It was found that as small a quantity as two ounces would emulsify one quart of kerosene, but that on standing a few hours a perceptible layer of kerosene had separated.

It has, further, been found that by scalding the flour before adding the kerosene a less weight is required. An excellent emulsion, which showed not the slightest separation of kerosene after one week, was prepared by scalding two ounces of flour, mixing the resulting paste with one quart of kerosene and emulsifying with two gallons of water.

The flour emulsion is smooth, readily and easily atomized, and does not clog the nozzle. Any separation into layers (no free kerosene will appear for several days, at least) may be readily overcome or remedied by simply stirring the mixture. It is equally effective, as might be expected, as an insecticide with the lime-formed emulsion, and amongst other advantages that may be claimed for it there is no perceptible whitening of the tree or foliage; and, further, in some places it may be found cheaper and easier to make than the lime emulsion. Its use is suggested as an alternative where good lime is unobtainable and also for making the emulsion when intended for ornamental shrubs, etc., where the whitening of the foliage is objectionable. The flour emulsion can be added to Bordeaux mixture, Bordeaux and Paris green, if desired.

Experiments are in progress which indicate that the proportion of kerosene (the most expensive constituent of the emulsion) may be materially reduced without affecting the insectidal value of the spray. Further particulars of these trials will be published in the June issue of The Horticulturist.

FRUIT GROWERS CONTINUE TO PROTEST

THE announcement in the April issue of The Canadian Horticulturist that the Hon. Sydney Fisher, Dominion Minister of Agriculture, had placed the chief of the fruit division under the chief of the dairy division was a great surprise to many fruit growers who had not heard of Mr. Fisher's announcement in the House of Commons. The result is that protests continue to reach The Horticulturist from fruit growers in all parts of Canada who are considering what steps they had best take to deal with the situation. That the present arrangements shall not continue any great length of time is the evident determination of the growers heard from.

The following are a few of many letters on this subject received by The Horticulturist:

Mr. Ralph S. Eaton, Kentville, N. S., president Nova Scotia Fruit Growers' Association: I hope the Minister of Agriculture will, in the near future, deem the fruit interests of Canada of sufficient importance to warrant the establishment of a fruit division occupying the same place in the department as other divisions which are responsible only to the minister.

Mr. S. C. Parker, secretary of the Nova Scotia Fruit Growers' Association: I feel strongly on this matter, and think united action should be taken by the various associations in Canada to bring pressure to bear on the honorable minister to place our chief in full standing in the department. I shall be glad to hear of any new development and any plan of action that may be devised.

Mr. J. C. Metcalfe, of Hammond, B. C., president of the British Columbia Fruit Growers' Association: The fruit industry of Canada is of sufficient importance to require the appointment of a fruit commissioner for that division, as in the other divisions and responsible only to the Minister of Agriculture, and further would add the necessity of the various fruit associations and fruit growers generally agitating and pressing upon the Dominion government the appointment of a commissioner for the fruit division.

Mr. Thomas G. Earl, Lytton, B. C.: It is degrading to the enormous fruit interests of this province, as well as to those of the whole of Canada, that the fruit commissioner should be placed under the control of the dairy or any other commissioner. I would think that the dairy commissioner would have his hands full in caring for his own department, and, besides, dairying and fruit growing are quite different. I would suppose the Dominion government, when taking into consideration the enormous and continued expansion of fruit growing, would see the necessity for placing the fruit interests in the hands of a competent commissioner expressly for that purpose.

NEW BRUNSWICK HAS ACTED.

Mr. W. D. Albright, secretary New Brunswick Fruit Growers' Association: At the fruit growers' convention in Fredericton a resolution was passed endorsing my action in protesting by telegram to Hon. Mr. Fisher against the subordination of the fruit to the dairy division. In conveying him the resolution I wrote a somewhat lengthy letter in reply to which I received some weeks later a letter fully explaining all the minister's reasons for the proposed change. The reasons to me, however, seemed mere excuses, and I think the press should not desist in its protest.

Mr. J. C. Gilman, Fredericton, N. B.: As a member of the New Brunswick Fruit Growers' Association I believe the fruit interests will not be served to the best advantage by being under the control of the dairy commissioner. Our fruit interests should have the best thought of some competent man instead of being served second handed.

Mr. George MacAlpine, Lower Gagetown, N. B.; In my opinion the fruit industry is only in the first stage of its growth, and its growing importance entitles it to as prominent a place as any other industry in the Dominion. I am in favor of having it stand on its own merits and not be subject to any other branch of agricultural work.

PRINCE EDWARD ISLAND.

Mr. P. N. Pate, O'Leary Station, P.E.I.: I am very much in favor of the fruit commissioner being independent of other agricultural work. In our small province I notice much more interest is being taken in fruit raising and many more orchards are being planted yearly.

QUEBEC SPEAKS UP.

Mr. O. M. Derby, Clarenceville, Que.. In view of the fact that our fruit industry has attained such proportions, and seems destined to become one of our most important departments of agriculture, I consider it advisable we should have a separate commissioner for that division.

W. D. A. Ross, Secretary Fruit Growers' Association, Chatham, Ont. : The fruit interests ought to be worthy of a division by themselves. If the same assistance is given to the fruit interests of the Dominion as has been extended to the dairy interests it may become just as important a division. It has been kept too much in the background. This matter should be pushed.

" Fruit Growers sidetracked," is the way in which Mr. W. C. Webster, of Stoney Creek, Ont., speaks of the matter. He goes on to say: "We very much regret that the Department of Agriculture has seen fit to unite the fruit growing industry with the dairy department. This has come as a great surprise to the fruit growers of this province. They have been looking to the Minister of Agriculture to acceed to the unanimous request of the associations throughout the Dominion to put the management of the fruit bureau on an independent footing. The industry is of sufficient importance to have as a head a man who has an intimate knowledge of all the details of fruit growing. It is just as important to have a head of this bureau as to have a minister of agriculture. We feel as fruit representatives that we have been treated very unfairly and unjustly."

More Fruit Might Be Grown.— Fruit growers in the Niagara district are beginning to realize that heavy, clay soil, when well drained, is the best for pears, plums and grapes. There are thousands of acres of this soil in the Niagara district well adapted for fruit growing, which are now only worth about $25 per acre. Much of this land in a few years will almost certainly be under cultivation for fruit.—(W. H. Bunting, St. Catharines, Ont.

The Best Export Pear in this district is the Duchess on dwarf stalks. I planted 1,030 last spring. The Duchess is a fall pear, and ranks ahead of the Anjou and Beurre Bosc. The Bartlett is the leading summer variety, and of winter varieties the Josephine de Malines and Easter Beurre. This latter will keep until April, and has a flavor similar to that of the Duchess, but is very coarse in texture.—(A. W. Peart, Burlington, Ont.

HORTICULTURAL COLLEGE AND STATION WANTED

THE fruit growers of the Niagara district have petitioned the Ontario Department of Agriculture to establish a horticultural college and fruit experiment station for their benefit. One of the strongest deputations of fruit growers that has ever waited on the Department of Agriculture interviewed Hon. Nelson Monteith, Minister of Agriculture, April 19, and laid their claims before him. Hon. J. S. Hendrie assisted Mr. Monteith in meeting the deputation.

The fruit growers of the southern fruit belt of Ontario have long desired to have a fruit experiment station and horticultural college, and recently they decided to bring the matter to a head by having a deputation wait on the Department of Agriculture. The deputation, which was introduced by Dr. Jessop, M.L.A., of St. Catharines, contained many of the most prominent fruit growers of the Niagara district and included representatives of the Hamilton and St. Catharines city councils, and boards of trade, as well as representatives from the municipal councils in the counties interested.

"To show you how thoroughly unanimous is the desire of the residents of the Niagara district that a horticultural college and fruit experiment station should be established for their benefit," said Mr. E. D. Smith, ex-M. P., of Winona, to Hon. Mr. Monteith, "I might state that all the municipalities in the Niagara district have passed resolutions approving of the government establishing such a college and station. There are five experiment stations in the Dominion, but none in the Niagara district, which is the most important fruit section in Canada. At the stations already existing apples are almost the only variety of fruit that can be tested to general advantage. What we need in the Niagara district is a station which will conduct experiments in the production of the varieties of fruit we grow and concerning which we are unable to obtain reliable information at the experiment stations which now exist. In the past our principal markets have been large cities not far distant from the Niagara district, to which we could ship our fruit without danger of its being damaged. The supply of fruit is increasing, which means that we must extend our markets.

"There has been a great growth in the trade with the Maritime Provinces, and the trade with the Northwest is rapidly developing. While we have been able to land our fruit on the local markets in good condition we find it is impossible to ship it to the distant markets although several varieties stand the shipment better than ours. California fruit growers are able to ship their fruit to all parts of the world and we should be able to do likewise. We need a fruit experiment station which will experiment in the production of varieties of fruit that will stand long shipment, so that we can be assisted in producing varieties that we can ship to distant markets. We have not one really good pear or grape. While some varieties are good shippers they each have some serious defects, such as poor taste, or susceptibility to disease. There are one or two good varieties of peaches and plums, but there is great room for improvement there also.

"If such an experiment station as we desire develops one good pear the revenue that will be derived from it by the fruit growers of the Niagara district would more than meet all the expense of the station. We do not want any 10 cent fruit experimental farm. I cannot too strongly impress upon you the enormous value to the fruit growers of finding varieties that will meet the requirements of the market. I believe the Dominion government should buy and equip the farm, but if it does not take the matter up there is a grand opportunity for the Ontario government to do something that will be of great value to the fruit growers of the Niagara district."

"While we have many of our leading fruit growers here," said Mr. A. H. Pettit, of Grimsby, "I am safe in saying the whole population would have acted on the deputation had they been able. The experimental farms at Ottawa and Guelph are of great value to the fruit growers in the northern districts of Ontario, but not of nearly as much value to the districts where the tender fruits are raised. What we need is a horticultural college where our young men can receive instruction in the raising of fruit. Many residents of cities would send their sons to take a course in such a college. The best proof of this is the fact that many of them write to our growers asking if they will take their sons for a season that they may gain experience on their farms.

"When the farm at Guelph was started there was some complaint about the expense, but that time has passed, as the people recognize the great value of the college. This would be the case with the horticultural college we desire to have established. We do not want it to conflict with the college at Guelph, and I do not believe it would, as it will have a field all its own. It is our wish that it should be established in such a manner that it will be possible for students to graduate from the High schools, take a course in the college of horticulture and step out ready to take up practical work on the farm. Recently we had to send to Delaware for an expert to address a series of meetings in our district. The reason we had to send to that state was that they have such a college there and the gentleman who attended our meetings was of great value to our growers."

"There is no need," said Mr. W. H. Bunting, of St. Catharines, "to point out the value of the institutions we have, as that is recognized. It has been one of the greatest regrets of my life that I was not able to take advantage of a course at a college like the college at Guelph, and I have been endeavoring to partly make up for this loss by securing this advantage for the benefit of my family. We have no fault to find with the capable officers at the Experimental Farm at Ottawa, or those at Guelph, all of whom are doing excellent work. Their field is large, however, and they are unable to give the required attention for the special needs of the Niagara district. This has made it necessary for us to apply for assistance again and again, to the colleges of the United States, and at times these requests on our part have placed us in a somewhat humiliating position.

"We desire to have an expert staff to carry on work that will be of great value to the Niagara district. We have heard a great deal of criticism regarding the packing of fruit. It is impossible to pack good fruit if the growers are not in a position to produce the best. We have, therefore, come to ask for assistance which will enable our growers to raise the standard of their products."

"The pests which destroy the fruit in the southern district of Ontario," said Mr. Hodgetts, of the St. Catharines Board of Trade, "are different from those in the northern sections and our fruit growers need assistance in learning how to control them. As the whole of Canada is affected by a shortage in the wheat crop of the west, so a shortage in the fruit crop in the Niagara district affects all branches of trade."

"Fruit production," said Mr. E. Morden, of Niagara Falls, "is increasing wonderfully. Twenty bushels are being grown today where one was raised 30 years ago. There is an immense market to the south of us, which is yet to be developed. Such a college as we desire will be of great value to the growers all along the northern shore of Lake Erie. The tendency of high schools is to educate the young men away from the farms. A horticultural college would tend to keep our boys on the farm."

Mr. Honsberger, of Jordan, pointed out that hybridizing fruit is an operation which is receiving a great deal of attention and which has accomplished wonderful results. He was of the opinion that a horticultural college and a fruit experimental farm might, by following up this line of work, be able to produce such varieties as the fruit growers of the Niagara district need for shipment to distant markets.

It was pointed out by Mr. W. J. Drope, of Grimsby, that fruit growers through ignorance frequently plant varieties of fruit which afterwards prove very unprofitable. If they had a thoroughly equipped college and experiment station, which could give reliable information of this nature, loss of this kind could be avoided. Other speakers included Mr. J. A. Keyes, of St. Catharines, and Mr. Nicholson, of Hamilton.

In replying to the deputation Hon. Mr. Monteith expressed the Premier's regrets that he was unable to be on hand to meet the deputation. The Minister of Agriculture stated that as yet the new government 's only getting its feet in the stirrups and consequently it is not in a position to give an answer immediately to such an important request. The members of the deputation were assured that the department realizes the importance of the matter and that it will do all in its power to assist them.

Hon. J. S. Hendrie asked the deputation if the Dominion government had been approached. Mr. Honsberger stated in reply that the Department of Agriculture at Ottawa had been asked for assistance, but had stated that it could not take the matter up at present.

A GREAT INCREASE IN SPRAYING

"IT is astonishing how stirred up fruit growers are this year over spraying. Men are spraying who never sprayed before, while those who have sprayed in other years are spraying more thoroughly. They realize that if they are to successfully combat the grape and plum rot, apple scab and other troubles fruit growers are heir to, they have simply got to spray. For every power sprayer used in this vicinity last year there are three being operated this season."

These remarks were made to an editorial representative of The Horticulturist a few days ago by Mr. Murray Pettit, of Winona, who conducts the fruit experiment station at that point, and who is known as one of the most successful fruit growers in the Niagara district. The Horticulturist's representative, who visited the section to ascertain what the growers are doing this year in the line of spraying, was astonished at the evidence on every hand of the amount of that work that was being done. Orchard after orchard was passed where the trees were almost perfectly white, they had been sprayed so thoroughly. The main topic being discussed by the fruit growers who were seen was spraying, and it included such subjects as the spraying experiments being conducted by Prof. Lochhead, of the Agricultural College at Guelph, the test that was recently made on the farm of Mr. E. D. Smith, of Winona, of different makes of spraying machinery, or some of the new spraying mixtures which are being introduced this year.

"In former years," continued Mr. Pettit, "I used a barrel Spramotor pump which had three nozzles. It was operated by hand, and by pushing tne work I was able to apply eight barrels of mixture in a day. This year I decided to secure a larger outfit which I could use to advantage on my grapes. After looking over the various machines on the market I finally decided to secure a spraying outfit from the Spramotor Company, of London ,Ont., which is fitted especially for spraying vineyards. At the spraying competition held in Mr. Smith's orchard this machine did excellent work and attracted a great deal of attention among the fruit growers. Two other well known makes of spraying machines were represented in this test, and I heard one leading fruit grower was so pleased with the working of my machine, which I loaned Mr. Smith for the test, that he offered an agent of one of the other makes $10 if he would release him from a contract to purchase one of his machines.

"My new machine can be operated by one man. It has eight nozzles, and I expect to be able to apply at least 16 barrels of mixture a day on grapes, and with about half the labor. It can also be used for spraying trees. If the horse is well trained one man is all that is required to operate it in the orchard, but otherwise two men may be necessary. One of the points I like best about this machine is that it is lighter than any other I have seen and generates the power from the axle with much less draft.

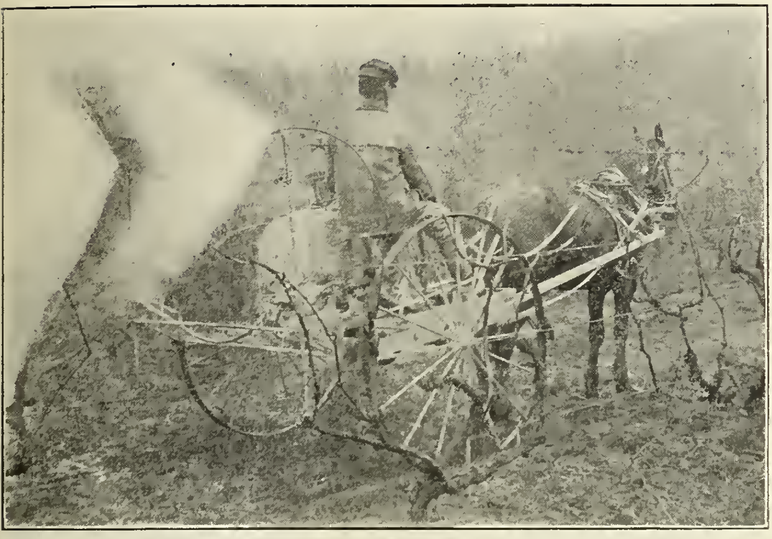
"This year I expect to spray three or four times with the Bordeaux mixture, but if the weather is very wet I may have to spray five or. six times, in which case it is probable I will use the ammoniacal solution. The experiments that have been conducted at the Ohio experiment station indicate that the first spraying operations in the vineyard before the buds start are not necessary. This is a matter, however, on which Prof. Lochhead is experimenting."

Loading Mr. Smith's Gasoline Spramotor

This illustration shows several of the barrels in which Mr. Smith boils his spraying material and his Spramotor being loaded. Mr. Smith is leaning against the wagon.

An enthusiast in the matter of spraying was found on the next farm in the person of Mr. E. M. Smith, who this year has two hand pumps and one gasoline power outfit with a 120 gallon tank, all of the Spramotor Company's make, of London, Ont. At the time of the visit Mr. Smith had his power outfit at work in his plum orchard and was boiling large quantities of spraying mixture, not only for his own use, but for the use of other fruit growers in the vicinity.

"This year is my first experience using a gasoline engine to furnish power for my spraying," said Mr. Smith. "I have used it freely, and find that it is very cheap to operate, as the gasoline only costs about 25 cents a day, during which time I am able to apply 800 to 1,000 gallons of mixture. Two men are all that are required to run the engine and do this spraying. When I used hand power I was only able to apply about one-third the quantity of material with the same number of men. It costs about eight to ten dollars for the gasoline for the season's work when 300 to 400 barrels of the mixture are used. Other years it has cost three times as much for the power. My outfit, including the tank, engine and pump, cost $240. I am able to use the gasoline



Mr. Pettit's Spramotor at Work in the Vineyard

With this outfit it is possible to thoroughly spray vines on both sides of the cart at the same time.

engine not only for spraying, but for cutting feed, sawing wood, and other work of that nature. It is a three horsepower machine. Before buying my spraying outfit I examined the others on the market and became convinced to my satisfaction that the Spramotor machine I purchased was the best as regards ease of operation, cost of power and durability. The chief feature in its favor, in my opinion, is the quickness with which the spray can be applied. When loaded with liquid it weighs about one ton. By deriving the power from the engine no hardship is entailed on the horses."

Adjoining the orchard there were nine barrels in which the lime and sulphur mixture was being boiled. The mixture was cooked by steam secured from the engine. The cooking operation lasted about one and a half to two hours. Eighteen pounds of sulphur were used to 36 pounds of lime. Mr. Smith explained that for the convenience of his neighbors he boiled this mixture and sold it to them for 90 cents a barrel on his place. "I boil about 300 barrels of lime and sulphur," said Mr. Smith, "which is applied to the trees while the buds are dormant. I spray once with the lime and sulphur and three times with the Bordeaux mixture."

"How many acres have you in fruit?" was asked. "About 35," replied Mr. Smith, "including 1,500 or 1,600 peach trees, 2,500 plum and pear trees, and 12 acres of grapes. I spray everything. This year I started spraying about April 13, and expect to get through by May 1. As soon as the blossoms drop I start with the Bordeaux mixture on the plums, pears, grapes and apples. Very few growers in this vicinity spray as thoroughly as I do, but I have found it has paid me to do it thoroughly. My plums last season netted me about $2,500. They were a very clean crop, and I believe the large percentage of first-class fruit was due to the spraying. Most of my neighbors who did not spray had a very light crop. This year the majority of them are spraying. If I had used the Bordeaux mixture on my grapes last year I believe I would have saved the whole crop. As it was I only had about a third of a crop, owing to the rot which made its appearance for the first time in my vineyard. I sprayed one row with the Bordeaux mixture as a test, although when it was applied I did not expect to be troubled with the rot. Out of the 75 or 76 rows in the vineyard the one I sprayed was the only one that was good. This year I intend spraying every vine."

"What do you find your spraying costs?" was asked. "Last year," replied Mr. Smith, "it cost about $250. This year the cost will be $350 or $400. While this may seem heavy, I am satisfied the spraying increases the saleable portion of the crop 25 to 50 per cent., which means that the work is a splendid investment."

"Are there many growers using the Spramotor gasoline outfit?" was inquired. "There are three in this vicinity," said Mr. Smith, "including Mr. A. G. Geddes, Mr. A. Vance Cline, both of Winona, and myself."

Like Mr. Pettit, Mr. Smith was satisfied that when he purchased his machine he secured the best for his purpose that there is on the market.

While visiting at Mr. Smith's place the representative of The Horticulturist had his attention drawn to a pail that was being used for screening the spraying mixture into the tanks. It was fitted with a tube in the bottom, out of which the mixture ran. In the inside of the pail there was a conical screen with the top of the cone pointing up. As a result of this conical shape, the screen, when the mixture was poured into the pail, did not become clogged as the rush of the water carried the sediment from the top of the cone down the screen to the sides of the pail and allowed the mixture to run through the top part of the screen. Mr. Smith was quite enthusiastic in regard to the pail. "It cost me," he said, "about $1, and I save 50 cents worth of time and bad language every day through having it. Only three or four are being used in the neighborhood. The pail is simply an ordinary galvanized iron pail. I bought a foot square of brass screen, with a mesh of about 30 to the inch. The pail and the screen were taken to a tinsmith, who put a three-inch tube into the bottom of the pail and fitted the screen inside. It is a great convenience for, as fruit growers know, an ordinary flat screen soon becomes clogged."

Mr. Smith's Gasoline Spramotor Outfit at Work

While The Horticulturist's representative did not have the time to visit other fruit growers in the vicinity, he learned that among others who were using the Spramotor power outfits, which seemed to be very popular, are Messrs. F. M. Carpenter, C. J. Carpenter & Son, J. S. Cockburn, J. J. Foran and John A. Foran, all of Winona; W. M. Orr, of Fruitland; G. L. Book, of Grimsby, and Robert Thompson, of St. Catharines.

Spraying will save the apple crop when nothing else will. It must, however, be done thoroughly or it might as well not be done at all.—(Adolphus Pettit, Grimsby.

I do not know of any way in which farmers with orchards can make a better percentage upon the outlay of effort and money than by spraying their trees.

The Gravenstein Apple in Ontario

LINUS WOOLVERTON, GRIMSBY, ONT.

THIS famous German apple is a universal favorite. The excellence of its flesh, its beautiful and attractive exterior, its abundant productiveness, and its large size all combine to make it the very best apple of its season. It is not a very old apple. The first description of it was written about 100 years ago by a German pomologist, and about 1850 it is said the original tree was still standing in the garden of the Duke of Augustenberg, at the castle of Grafenstein, in Schleswig-Holstein, Germany.

Gravenstein Trees in Bloom.

The apple is widely grown in western Europe as an early fall market apple, and it is this apple that has made the Annapolis Valley, in Nova Scotia, famous; so much so, that many people suppose there is no place equal to it for apple culture. As a matter of fact this apple can be produced in Ontario quite as perfect, and possibly larger in size than in the Annapolis Valley, and it is a mystery why our apple growers have not planted them. Very seldom do we find an orchard of the Gravenstein in Ontario, and indeed rarely do we find even single trees of this excellent apple.

The illustration shows a row of trees of this variety, now about 50 years of age, growing on the experimental grounds of the writer. No trees on the place are as beautiful in blooming season as these; the great, pure white blossoms throw all other varieties into the shade, and attract the ladies in search of floral decorations. The fruit makes the most delicious sauce, and the very best of apple pies; while for a commercial variety it is unexcelled. The fruit is clean and uniform in size, and it commands the highest price in the British markets.

Pears in an Apple Orchard

D. JAMES, LANGSTAFF, ONT.

I HAVE only about 20 or 22 pear trees planted in and about my apple orchard. They were planted for home use and not to make money, but having more than required I always sell the surplus.

The Flemish Beauty has been the most profitable. The Improved Kieffer is good for canning and will keep well for shipment to the northwest. The Bartlett is not a healthy tree, but of course the fruit is luscious. The Ritson, Buerre Clairgeau and Buerre d'Anjou are grown, besides some with whose names I am not acquainted. A late fall or winter pear is the most profitable, as the grower is not forced to market them as soon as gathered. The Winter Nellis is highly spoken of by others.

There is no place in Ontario where co-operation in the spraying and marketing of fruit is more neglected and more needed than in the Georgian Bay district.—(Wm. Patello, Creemore, Ont.

SPRAYING WITH THE NEW K. L. MIXTURES*

THE San Jose scale made it appearance on chestnuts and various shrubs in the United States as well as on fruit trees, said Mr. A. N. Brown, of Wyoming, Delaware, in his talks before the Niagara Peninsula Fruit Growers' Association, last month, but it has been fought successfully and it is the duty of fruit growers to fight it persistently and to gain control. The black rot is another prevalent disease, but it has been successfully combatted. In the state of Delaware spraying has been attended by the most satisfactory results. The trees have been made almost immune from attack. A healthy tree will resist attack. Trees can be made healthy by spraying, which will kill other pests as well as the scale. An addition to the wash will kill fungi.

He would advise against the use of caustic soda, but the lime, sulphur and salt wash is good. Oil—crude or refined petroleum—will kill scale. There is a soluble oil in use—19 gallons of water to one of oil is the proportion. The new K. L. mixtures which are being experimented with, and which promise to be most effective, were described by Mr. Brown. K. L. is made from kerosene and limoid, the latter a high grade magnesian lime, with 40 per cent. magnesia. The proportion for the mixture is one quart of oil to one pound of limoid. Crude oil will not do. It is a question whether K. L. can be used in Canada on account of the expense of refined oil. In the United States they can buy it for seven and a half cents per wine gallon by the barrel, and at that rate they can use it.

A test was made at two or three of Mr. Brown's demonstrations to see if ordinary Canadian lime can be used instead of limoid, and though only partially successful it appeared as if it might. Bordeaux mixture can be used instead of water, and the wash K. L. B. then becomes a fungicide. By adding a poison, such as Paris green, London purple, or preferably arsenide of soda, it becomes also an insecticide, K. L. B. P., and will kill chewing insects, such as codlin moth, etc. The lime is simply a conveyor to carry the oil evenly to all parts of the tree so as not to burn any part, which oil is liable to do.

The advantage of K. L. is that it is easily made and will do for a summer wash and has greater covering capacity than other washes. When dry slaked or air slaked lime is used the mixture must be agitated violently for five minutes to emulsify it; when limoid is used the agitation need only continue three minutes. When thoroughly emulsified the kerosene is not likely to separate from any of these forms of lime.

It is important that the materials used should be pure. Every part of the tree should be thoroughly sprayed, otherwise the scale will not be killed and will soon spread. The wash should be in the form of a spray, not a sprinkle. Large orchardists should use power machines.

If the Bordeaux mixture is properly mixed, said Mr. Brown, one application is enough. The bluestone may be seen all season on his trees from one application. He used arsenide of soda because it is soluble in water, other poisons are not, but it is a rank poison and has to be used very carefully. It is better than Paris green and only costs half as much.

The K. L. B. P. mixture, Mr. Brown claimed, is a panacea for all the pests of the orchard—sucking insects, biting insects and fungous diseases.

I believe in thorough cultivation of the peach orchard and heavy pruning.—(Adolphus Pettit, Grimsby, Ont.

If left to itself the San Jose scale will destroy an orchard in two to four years. Spraying is the only remedy.

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* This article, owing to crush of matter, was crowded out of the April issue.

NOVA SCOTIA AS AN APPLE GROWING PROVINCE*

RALPH S. EATON, KENTVILLE, N. S.

On account of the general large crop throughout all apple growing countries and especially in England, the prices for fruit shipped before December 1, 1904, were very low, the lowest since 1896. Many fruit men would have been better off had they left their Gravensteins on the trees. Blenheims were particularly clean and their seemingly spot proof skin advanced them many points in their position among the most desirable varieties. The King, too, though always popular, strengthened its place on the markets last year.

Comparisons between Nova Scotia fruit growers and others are usually interesting. Knowing that the great bulk of our apples are grown in a little valley between Windsor and Annapolis it is natural that we should be curious to see how our output compares with the big province of Ontario and some apple states of the Republic. Our fruit business occupies a conspicuous place and may be regarded with pride. The value of its exports exceeds the value of the combined export of all our other farm products.

From carefully prepared statistics of the International Apple Shippers' Association the following estimate is made of the crop for 1903, a year of good average crops for Ontario and the States mentioned:

	Barrels
Nova Scotia	525,000
Ontario	547,000
Maine	500,000
Massachusetts	132 000
Pennsylvania	173,000
New York	3,184,000
Ohio	240,000

Fruit growing has increased the value of farms in fruit districts from two to five times the value of farms of equal area in other parts of Nova Scotia. It has changed many acres of our country from a value of $20 or $30 to the selling value of $1,000. It has changed hundreds of farms from a value of $1,000 or $2,000 to $10,000. It has changed dozens of farms from a value of $2,000 or $3,000 to $15,000 and $20,000 and a number to $25,000 and $30,000. It has advertised the province more than any one of its products. In visiting, a few years ago, a number of horticultural societies and fruit men of the United States, I was met almost invariably with the question, "Are you from the great fruit district of Nova Scotia?" It is probable that more people in the world know of Nova Scotia from its fruit than from any other source.

The average yield of apples in Nova Scotia for the last 10 years has been about 300,000 barrels. The bearing orchards 25 years of age and upwards well cared for have been producing during this time about 100 barrels per acre. All orchards are not well cared for and perhaps 50 barrels per acre would be a fairer average estimate. This would show the crops to have come practically from 7,000 acres or 11 square miles, or a square of about three and a quarter miles. Does this not seem almost incredible? Yet this small square properly cared for will produce 700,000 barrels annually.

The area of Nova Scotia is 21,731 square miles, about 2,000 times the area producing our apples. Only a very limited proportion of this area is not suited for this fruit. This has been proved in many ways. The county exhibits at the Provincial Fair substantiate this. Hants and Pictou are magnificent counties for fruit and each could be growing as well as not, without the slightest interference with the other crops, a million barrels of apples annually. Beautiful apples have been grown in the most northerly points of Cape Breton and southerly parts of Shelburne, Lunenburg, Yarmouth, Digby, Halifax, Antigonish and Victoria. Many growers in these districts consider their apples excel the "Valley" in quality. It has been largely accidental that King's and Annapolis counties have been growing the great bulk of the fruit.

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* An address delivered at the last annual convention of the Nova Scotia Fruit Growers' Association, of which Mr. Eaton is president.

During the next 10 years King's county, Nova Scotia, will be rather conspicuous for its output. Though from one standpoint the plantings of recent years have been few, yet in the aggregate they have been sufficient to put the crop at 500,000 barrels in the near future. The setting of 1,000 to 2,000 trees by an orchardist of late has scarcely caused a passing comment. Fifteen years ago 1,000 barrels was the highest mark for a single farm. Eight years ago 2,000 barrels was the largest figure. Two years ago 3,300 barrels were harvested from one property. Within five years 4,000 barrels, within 10 years 5,000 to 7,000 barrels will be shipped by a single grower.

After evolving a scheme for encouraging the more rapid development of fruit culture in the other counties I presented it to the government of the province. It included the planting of one to three model and experimental orchards in the most desirable localities in each county and the securing of five to ten farmers in each locality to duplicate in area and in care the pattern set by the government.

The government has adopted the scheme in part, having established one or two orchards of two acres in each county. The success of the scheme submitted should aid largely in stimulating the planting in large areas around each nucleus and quite rapidly cover the bare fields with trees supplying a variety and quantity of fruits which will make each county produce, it is hoped, in the not far distant future, as much as either King's or Annapolis counties are growing to-day.

CANADIAN APPLES IN ENGLAND

T. H. RACE, OTTAWA, ONT.

WHAT becomes of all our good Canadian apples is a question that I have been asking myself during the past two months without a satisfactory answer. I do not find them on the tables of our ocean steamers, nor on the hotel tables in England, nor on the large market stands, nor in the shop windows. On the Cunard and Anchor line steamers, both British lines, nothing but a third class Baldwin can be found upon the tables. In fact throughout England it was Baldwins of a low grade that I found offered everywhere. Having been in England for the past two months in charge of the Canadian exhibit at the Colonial Products Exhibition, Liverpool, I made it my business to see and learn all I could of Canadian fruit there. For our exhibit we had 55 boxes of well selected apples, Ben Davis, Spitzenburgs, and Blue Pearmains from British Columbia; Peerless, McIntosh Red from the St. Lawrence valley; Spys, Baldwins, Stark, Ribston Pippins, Greenings, Kings, Golden and Roxbury Russets and Cranberry Pippins from Ontario, Quebec and Nova Scotia. In all the boxes each apple was wrapped in a separate piece of paper. There was never before such an attractive display of apples seen in Liverpool. "Why cannot we get our apples done up in that shape here in the market?" was the question that everybody asked. We wholesaled our stock to one of the most enterprising dealers in Liverpool at six shillings a box,and he disposed of them at a large profit, as he said himself, "like wild fire."

I do not know that this price, six shillings, would pay the packer, but we could have got two shillings more just as easily, only we wanted to give the dealer a chance to boom them, which he did.

One morning I visited St. John's market, the largest in the city, and I saw there any amount of United States apples, all low grade, selling at four pence and five pence per pound. No one seemed to be offering a fine quality got up in an attractive shape with the placard, "grown in Canada," as we recommended to the dealer who got our stock. Another morning I visited the great wholesale mart and saw lot after lot of United States Baldwins knocked down at 10 to 14 shillings per barrel. After these had been disposed of a few lots of No. 1 Newtown Pippins were offered and were snapped up at 20 shillings per half barrel. This convinced me that there is as much in a name and a condition as in quality. Establish a name for our No. 1 Spys, offer them in an attractive condition, and there should be as much money in them as there is in the American Newtown Pippin. Another thing that attracted special attention in our exhibit was the nicely packed boxes of evaporated apples. We distributed a few samples of these among the better middle class and in every case the recipient came back and pronounced them delicious. We disposed of our stock of these also to the dealer already referred to—Thos. Dowd, of Moorefield Place, Liverpool—who is going to introduce them to the Liverpool trade. I see no reason why a very large trade should not be secured in England for this Canadian article. So far as Liverpool is concerned I believe the matter is in good hands, and if Mr. Dowd does as well for Canada as has been done for the island of Jamaica in handling her fruits and finding consumption for them, it will be well for the Canadian growers, packers and producers to get into business relations with him.

NOTES ON SPRAYING

PROF. W. LOCHHEAD, O. A. C., GUELPH.

FRUIT growers and gardeners should give considerable thought at this time of the year to the selection and purchase of spraying materials. They must take for granted that injurious insects and fungous diseases will attack their crops this coming season and should be prepared to meet their attacks successfully.

The secret of successful spraying lies in a thorough knowledge of the habits of the injurious insects and fungi, and in the intelligent application of the chemicals which have been found most effective as insecticides and fungicides. Some sucking insects, like the San Jose scale and the pear psylla, can be best treated in the spring before the buds open, with the lime-sulphur solution. The preparation of this solution is well known. Where the orchard is large it is advisable to boil the lime and sulphur for one and a half or two hours, according to the formula in use for the last two years.

The lime-sulphur solution applied to peach trees will prevent leaf-curl to a large extent. It is also, therefore, a valuable fungicide. As soon, however, as the buds open other solutions must be used. The standard fungicide is Bordeaux mixture. The 4-4-40 formula is generally employed in Ontario, *i. e.*, four pounds copper sulphate, four pounds quick lime, 40 gallons of water. Stock solutions of known strength of the copper sulphate and lime are prepared and kept in separate barrels. Two precautions must be taken in making the spraying solutions: (1) The stock solutions should be poured separately into the barrel, which should be nearly half full of water. (2) The ferrocyanide test should always be made to determine if enough lime has been added.

TO KILL BITING INSECTS.

Some arsenic compound should always be mixed with the Bordeaux to poison the biting insects and caterpillars. Paris green is the one most commonly used, and at the rate of six to eight ounces to the barrel of Bordeaux. White arsenic, being cheaper and more constant in strength, is being used quite extensively by many growers in the following forms:

1. Arsenite of soda, made by boiling four pounds of sal soda crystals in one gallon water with one pound of white arsenic. A pint of this solution is added to the barrel of Bordeaux.

2. Arsenite of lime, made by boiling one pound of white arsenic in two gallons of water for half an hour, then adding two pounds of good quick lime. A quart of this solution is used with a barrel of Bordeaux.

One application, at least, should be made before the blossoms open, to prevent scab on apple and pear, brown rot on plum, and the ravages of the bud moth and the case bearers. Another application should be made after blossoming to prevent scab, brown rot, and the codling moth. Two more applications are necessary through the season if fruit free from scab is desired.

ONTARIO AND NOVA SCOTIA METHODS COMPARED

G. FRED. MARSH, CLARKSBURG, ONT.

AN interesting article by Mr. A. McNeill, Chief of the Fruit Division, appeared in The Horticulturist, in which he says: "The extent to which commercial fertilizers are used in Nova Scotia would seem most extravagant to an Ontario farmer." Mr. McNeill also says, "the Ontario grower might well envy the vigor of the Nova Scotian trees," and this vigor he ascribes chiefly to the better care and attention which the trees receive. These will all play their part, but no doubt a considerable part of it is due to the feed.

A farmer cannot expect a horse to do good work or a cow give a plentiful supply of milk unless they have the proper food; neither can a tree bring forth fruit year after year unless it is properly fed. In Nova Scotia a common application to a bearing orchard is 300 pounds of bone meal and 200 pounds of muriate of potash per acre, and when a tree carries a heavy load a further application of nitrate of soda is made in order that the growth of the tree may not be checked and the next year's yield thereby lessened. The effect of this fertilization is seen not only in the yield and quality of fruit but also by the fact that the off year, as it is called, is almost entirely done away with, and the Nova Scotia farmer can count on a crop each year.

In comparison with this picture the average Ontario orchard grows a number of crops of grain and is then seeded down, and is usually suffered to go on producing hay indefinitely. It will be fortunate indeed if it gets an application of farmyard manure once in six or seven years, while the ashes which should be used to balance up the farmyard manure are shipped out of the country to help the United States farmer grow fruit. Surely the Nova Scotian apple grower would call this "extravagant practices."

At any station in Ontario can be seen the dealers screening and grading their ashes ready for shipment. The Ontario fruit grower must be very blind to his own interests when he allows as much as a million bushels of ashes to be exported annually from his farms.

A recent call on one of our fruit growers brought this very prominently before me. This gentleman had drawn out the trimmings and limbs from the spring pruning and piled them in a loose windrow, afterwards burning them and putting the field in corn. On the spot where the ashes had been plowed in the corn yielded at least twice as much as the rest of the field. When I asked what he would put in the orchard to take the place of the plant food which had been taken from the trees to make corn he was much surprised and did not seem to realize that an apple orchard required to be fed just the same as a corn field.

A Codling Moth Parasite

W. LOCHHEAD, O. A. C., GUELPH.

I HAVE received the following letter from Mr. Ehrhorn, Deputy Commissioner of Horticulture, California, regarding the parasite of the codling month which he has introduced into California. The codling moth is not nearly so destructive in Europe as in America, and it is generally suspected that a certain parasite keeps the moth in subjection.

Horticulturists are greatly interested in the codling moth, which involves millions of dollars losses annually. For many years entomologists and others have been searching for valuable parasites which, if propagated in sufficient numbers, would keep it in check.

Mr. Ehrhorn's letter is as follows: "We have a parasite of the codling moth, and some have been liberated in various sections of California and we are breeding them at our office. I am unable to give much information with regard to the parasite, as the time has been too short to make any extensive observations, but this very insect keeps the codling moth in check in Europe, and we are in hopes that it will do the same for us in California. Time only will determine whether or not the parasite will do the work."

Trees Which Failed to Grow

W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA.

I set out a few apple trees last spring. Some of them did not make any growth, yet they are as green as can be right to the top. I also planted an Austrian pine. It does not look very well, although it is green. Do you think they will grow?—(Chas. Derdaile, Walkerville, Ont.

If the apple trees and pine trees were still alive in the autumn of 1904 it is quite likely that they will live. It very frequently happens that when trees are received in poor condition, or if the soil is not properly prepared, or the trees not planted carefully, that they will make little or no growth during the first season. If the winter is very severe it is quite possible that the trees may die, as trees that are not in a thrifty condition suffer, but the chances are that they will live.

What Varieties Would Be Best?

PROF. H. L. HUTT, O. A. C., GUELPH, ONT.

What varieties of fruit are best suited for Simcoe county? Will chestnuts and filberts grow here?—(W. A. Platt, Phelpston.

You have in your immediate neighborhood at Craighurst one of our Ontario Fruit Experimenters, Mr. G. C. Caston, who could give you more reliable information on the subjects mentioned than any one else I know of in that part of the country. The varieties of apples he has found most profitable are: Duchess, Alexander, Blenheim, Ontario, Spy, and Guano. The Duchess is, on the whole, one of his most profitable varieties, but it is a fall apple, and it would not be wise to plant largely of it unless you are sure of being able to handle the crop in the proper season for market. The Blenheim, Ontario and Spy succeed best when top worked on some hardy stock, such as Tallman Sweet.

Chestnuts and filberts would not be likely to succeed in your neighborhood. Chestnuts grow well naturally in the southern parts of Ontario, but I know of no place where they have been successfully grown in the northern parts of the province. Filberts are barely hardy enough for the southern sections, and it would be useless attempting to grow them in the northern portions of Ontario.

It would be better for Nova Scotia if there were not more than half a dozen varieties of apples in the whole province and certainly in a neighborhood it would not be wise to grow more than half a dozen. No farmer should have more than three varieties on his farm for export.—(A. McNeill, Ottawa, before Nova Scotia Fruit Growers' Association.

PRUNING IN THE SPRING *

J. M'P. ROSS, TORONTO.

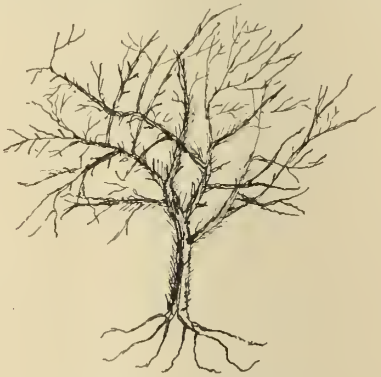
I DO not know any gardening operation that gives as much pleasure to the reflective mind as pruning. Every bud has an individuality of its own, as it contains the duplicate of the stem or branch it is on. No branch should be removed without a reason, and the trained horticulturist can see at a glance why such and such a limb should be cut back or thinned out. The pleasure comes in feeling that your work is done understandingly.

Pruning is identical with cultivating. As the gardener hoes out the weeds between the rows and thins the plants in the row for the purpose of giving sun and air to those that are left, knowing that when they are developed they will require all the space left, so the intelligent pruner thins out the branches on the shrub, vine or tree so as to allow the sun and air to benefit the fruit. By the removing of the surplus growth he sends the sap that would have otherwise gone to supply branch, leaf and fruit into the remaining branches, foliage and fruit, making sturdier branches, larger foliage and finer fruit.

It is a great pleasure to the pruner when he comes to a tree or bush that is full of wood, misshapen and neglected, to put it into proper shape, that is, to have the branches nearly balanced all round, to prune so as to leave the stems or branches all about the same dimensions; if the growth is too much to one side to shorten that well back, thus sending the sap to the weaker side.

We prune to produce form, to produce fruitfulness and to restrain fruitfulness. To produce fruitfulness summer pinching is practised. When a tree is growing luxuriantly and not fruiting the reason is that the roots are revelling in rich soil with abundant food and sending up sap so freely that it is simply making wood. To check this, when the young shoots are, say, six inches long, nip the end off with the fingers. This checks the growth and induces the tree to form fruit buds which will fruit next year. Bending the branches down by tying on weights is another system. Any method will answer that retards the sap. Root pruning is also effectual. This is done by digging a trench around the tree and cutting the leading roots with the spade, which is almost akin to transplanting. This generally results in throwing the tree into fruit bearing. Going over the tree when in full growth and pinching back the leading shoots two or three times is the most effectual.

Some seasons are so cold and wet when the trees are in bloom that the bees and insects cannot fly, and the blossoms are not fertilized, and sometimes late frosts are reasons for loss of fruit.



Gooseberry Untrimmed

OVER PRODUCTION.

To restrain over production of fruit prune the limbs hard back. This removing of the wood leaves fewer buds on the tree, and when they grow having more sap to draw on they produce larger leaves to draw the sap, inducing a healthier, thriftier growth all round the tree, entirely renewing the wood. Old trees exhausted by bearing can thus be renewed into bountiful growth and a new lease of life of fruit bearing.

Very few flowering shrubs should be trimmed at this time of year, but should be left till after flowering, as any cutting back now or thinning out means merely removing so many flowering branches. Above all things do not clip them into round heads, as it totally destroys the individual growth with its characteristic grace, leaving nothing but meaningless round form, abominable in its stiffness. The hydrangea is the only shrub that should be well clipped back in spring before growth. All others should be pruned or thinned out after the flowering season is over.

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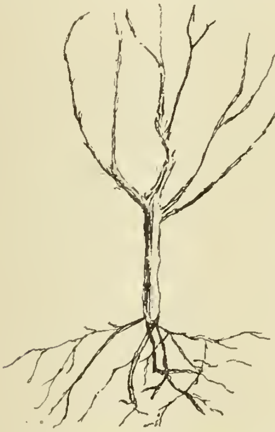
* A paper read at the April meeting of the Toronto Horticultural Society.



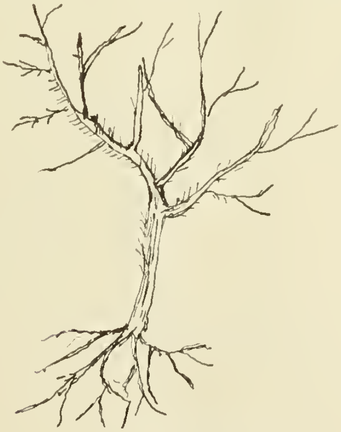
Gooseberry Trimmed

Raspberry canes cut back to within six inches of the ground will give a crop of fruit later in the season, after the other canes pruned back in the ordinary way have fruited and gone.

We all know how much finer the fruit is that is grown on young bushes or trees. It is generally larger and always perfect, with high color and shining skins as though polished. This is accounted for by free open exposure to sun and air, and this fact should point out strongly the benefit of pruning, which always should tend to keep the bush or tree open and well supplied with vigorous wood. The character and habit of growth of different varieties of fruit trees has also a bearing on the pruning necessary for each. The pruning required for Northern Spy should always be to widen the branches and open the centre, as the tree has an upright tendency of growth similar to the lombardy poplar. As a contrast, in the case of the Rhode Island Greening, the object is to promote an upright tendency, as the habit of this variety is to spread out, and its branches after bearing soon touch the ground unless the pruner lifts them up.

The tendency of sap is always to the top bud, which if not cut back goes on indefinitely. The King of Tomkins is an example.

Pruning to produce an equal distribution of sap in all the branches consists in thinning out the branches so as to have the growth of the tree equally balanced all round. As the sap always ascends to the top of the tree, leaving the lower branches in a feeble condition, it is necessary to cut back the leading shoots so as to force the sap into the lower branches and thus keep up a uniform growth. Pruning the smaller branches on the strong part of the tree and leaving them on the weaker part restores the balance, as by removing the branches you remove the foliage which attracts the sap, and leaving branches with their foliage on the weak part induces the sap to go there, thus increasing the strength of the tree in that part.



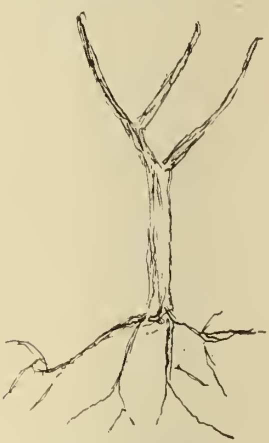
Rose Untrimmed

As gooseberries bear their fruit on the two-year-old wood it is necessary to always keep a few strong shoots growing to keep up the head and renew the bearing wood. These shoots are shortened back next year to produce lateral fruit-bearing branches. In short the bush should be trimmed to have say five leading branches placed at equal distance from each other, with the center open to avoid density and confusion.

Roses require hard cutting back, particularly hybrid perpetuals. Fully two-thirds of last season's growth of wood should be removed. This hard cutting back and thinning out weak growth induces such a vigorous growth and large sappy foliage that insects do not molest them, but leave them for weaker foliage. The blooms will also be larger and sweeter scented, both qualities greatly to be desired and produced by severe cutting back.

Persian Yellow and Austrian roses should only be pruned every second year, while the Crimson Rambler type of roses require no pruning beyond removal of weak or dead wood, or the removal of a branch growing where it is not desired.

Climbing roses of the Prairie type require sharply spurring back, and long leading branches should be cut back to firm wood by thinning out into branches or canes of similar thickness. Disbudding roses, or rubbing off those buds not wanted prevents after confusion and economises sap. When cutting back the shoots cut close to an eye, leaving as far as possible full plump buds as more likely to produce flowers. Cut also those pointing outwards as more likely to give a handsome shape. Moss, Provence, Damask and Austrian roses should be cut back to within two or three eyes of the riper wood. Vigorous growing kinds do not require too close pruning, but weaker growing kinds should be severely cut back.



Rose Trimmed

HOW TO PLANT STRAWBERRIES

J. O. DUKE, OLINDA, ONT.

IN planting large patches of strawberries I have had the best results by simply plowing a furrow across the field and setting the plants against the land side of the furrow, which is filled in at once on the return of the plow, marking out going one way across the field and filling in the furrow coming back. Six men can plant as fast as one man with a team can mark out and fill in, thus planting quite a large patch in a day.

The furrows should be about four feet apart and most varieties may be planted three feet apart in the row, though some kinds, like Michael's Early, which produce many plants, can go four or five, while Bubach and Clyde, which are not heavy plant producers, should be planted 18 to 20 inches. Strawberries planted in this manner should be cultivated and well hoed within a week of planting, then cultivated often enough during the summer to keep them free from weeds and grass. Care should always be taken when cultivating to run the cultivator the same way in the row, thus training the runners in one direction.

Blossoms and fruit should be clipped off as soon as they appear. Planting should be done about May 1, and not later than May 10 in southern Ontario. The rows should not be allowed to become more than 18 inches wide. It is a good plan to sow the patch to oats as soon as enough plants have formed. This prevents the formation of a lot of weak plants late in the fall, and also provides a nice mulch. If this is not done the patch should be well covered with clean straw early in the winter.

BEST VARIETIES OF FRUIT

"IN raspberries the Turner and Reliance," said Mr. A. E. Sherrington, of the Huron fruit experiment station, to a representative of The Canadian Horticulturist, "have been found to be the two best early varieties in this vicinity, and the Cuthbert and Phoenix the two best medium and late varieties. In currants, of the reds, Fay's Prolific, Pomona and Versailles have proved to be the best varieties, both in productiveness and quality. Among the blacks the Champion and Naples have been the most satisfactory in every respect, including growth of bush and fruit, as well as quality.

"Of white currants the White Grape is the best variety. The experiments with gooseberries have shown the Downing and Pearl, both of which are American varieties, to be the best and most profitable. The Red Jacket, also an American variety, is very promising but requires further testing.

"The three favorite strawberries are Michael's Early, Sanders and Brandywine; the last two are the best for canning. The apples that have given the best results include the Spy, Ben Davis, Rhode Island Greening, Duchess, Baldwin and Golden Russett. Many other varieties have done well but have not proved as prolific commercially. Among the promising new varieties are the Northwest Greening, a winter variety which has a healthy, vigorous tree, is an early bearer and produces much fruit of fair quality, and the Salome, a very desirable winter apple."

IN THE BURLINGTON DISTRICT.

"Among the best varieties of red currants for the Burlington district," said Mr. A. W. Peart, of the Burlington station, "are the Victoria, Wilder, Cherry and Fay's Prolific, for early varieties, and North Star and Prince Albert for medium to late varieties. In black currants the most desirable commercial varieties are the Sanders, Naples and Collins' Prolific, the latter being a late variety. In white currants the Grape is the largest and most productive, while the Imperial is superior in quality. The severe weather of a year ago had the effect of drawing the line between hardy and tender varieties of blackberries very closely. Those which passed through and cropped last fall out of a list of 22 varieties were the Agawam, Western Triumph, Snyder, Ancient Britain, Eldorado, Stone's Hardy and Wachusetts. For a commercial plantation Mr. Peart considers the best paying varieties are the Agawam, Snyder, Kittatinny and Western Triumph."

I have tested 15 varieties of blackberries and have narrowed them down to two, and these two fill the bill for this locality. They are the Eldorado and Agawam. They lose none of their bearing wood during cold winter and give excellent crops, both in quality and quantity.—(G. C. Caston, Craighurst, Ont.

We couldn't do without such a paper as The Horticulturist.—(C. W. Mitchell, Pt. Elgin, Ont.

The Strawberry Patch

MRS. JOHN GILFILLAN, KIRKTON, ONT.

ROWS of strawberry plants are usually placed about three and a half to four feet apart and the plants 15 to 24 inches apart in the rows, according to the thriftiness of the variety or varieties grown. The choice of varieties should only be made after actual test. Begin planting as early in the spring as possible, to get the benefit of early rains and thus give the plants a vigorous start.

Plants should always be well trimmed, all large or dead leaves removed, together with the tips of the roots, which will then branch out and take a firmer hold of the soil. Begin cultivation immediately after planting and continue throughout the season, thereby keeping weeds in check, conserving the moisture in the soil and confining the plants to their alloted space in the rows. Blossoms should be removed the first season, as well as any runners that may appear before the plants are in a sufficiently vigorous condition to support them.

Chrysanthemums in May

GEORGE HOLLIS, BRACONDALE, ONT.

MAY is a busy month for the chrysanthemum grower, especially for cut flowers. Cuttings of late varieties should be rooted ready to plant early in June. Keep the cutting bench rather wet and shade the plants from the sun. The air from the ventilators should be kept off them by hanging a curtain of cotton before the plants as, otherwise, the air will wilt them badly.

The early varieties such as the Bergsman and Monrovia should be planted this month. A good, stiff loam, which has been stacked for some time, is the best soil to use. Four wheelbarrows of this and one of well rotted manure (cow manure preferred), with some fine ground bone, say a four-inch pot full of the bone to each load, or two bushels of soil, makes an excellent mixture.

Clear the bench and give it a coat of new lime. Put four to five inches of soil in the bench, the coarse in the bottom and the fine on top. Plant the early varieties about five inches apart in the row; if fine blossoms are wanted leave seven inches space. The late varieties need more room.

Pot the cuttings as soon as they are rooted. Do not leave them until they become hard and draw up thin, as if you do you cannot obtain high class flowers from such stock. See that the exhibition pot plants are kept near the glass and potted as needed, and grow the strongest shoots at the back. Syringe the plants with tobacco water for the black fly, or fumigate them. A good start with chrysanthemums is a great advantage.

Planting Asters

FOR asters dig and rake fine about a square yard of rich soil in the open garden. If the soil is poor, dig in some well-rotted manure or cow manure. When the soil is fairly dry, make some shallow drills about half an inch in depth. The drills should be about eight inches apart. Sow the seed as soon as possible, thinly, about an inch apart in the drills. Rake the soil over lightly, sufficient to cover the seed. If the soil is dry, give it a light watering, using a fine sprinkling watering can.

When the plants are about two inches in height, transplant into rows about 15 inches apart. The plants should be about 10 inches apart in the rows. The soil should be prepared in the same way as for the seeds. The plants should be set in the soil a very little deeper than they were when growing in the seed bed.

One Layer of Manure to three or four of sod would be a better proportion for raising early vegetable plants than that given on page 146 of the April issue, as a compost less rich in fertilizing property produces a hardier and sturdier growth than when a very rich compost is used.—(Correction sent in by Mr. Hunt.)

Scarlet Salvia*

JESSIE EDMUNDS, BURLINGTON, ONT.

THIS is one of the best bedding plants we have where a great show of brilliant color is desired. Being a tall growing plant, is is very effective in groups for the lawn where prominent beds are desired. Its flowers are borne in spikes six inches long or over, and are the richest imaginable scarlet. So bright are they that they have a glow like that of fire when the sun shines on them, and so deep is their tone that they seen as if made of velvet.

A row of these plants make a magnificent background for a border along a fence or building on the sunny side. It is excellent for cutting. It is of the easiest possible culture. Either plant the seeds in the open border or under glass, to transplant when they are two inches high. Give them a rich mellow soil, keep the weeds down, and nothing more is required, unless the season should be dry, in which case it may be necessary to water daily.

If growing in the open, stake the branches as they are very brittle and easily broken by wind. If some of the shoots that spring freely from the roots are taken off and potted in September you will have a fine plant for winter blooming. The old plants will continue to bloom till frost nips them. The red spider is the one foe of the salvia, and if it makes its appearance the plant must be showered daily or it will be ruined.

Pruning Roses in other countries is generally done in the fall, but here it must be left until the spring, and I have found it most advantageous to leave it until the very end of April or the beginning of May, and the most to be done then is to remove all the dead wood, but some pruning may be necessary in the early part of July in cutting back to a few eyes some of the strong growing shoots, and thereby perpetuating the bloom.—(Robert Barclay, Winnipeg, Man.

Rose Culture

W. G. BLACK, OTTAWA.

IN selecting a place for a bed of roses the situation, as far as possible, should face the south and east. Roses require full exposure to rain and sunshine; they also require shelter from storms, north and west winds, and it is desirable to have a rose garden shaded from the fatigue of the afternoon sun. Beds should be so placed that each plant can be seen from the walk. This prevents beds being tramped on.

Taller growing varieties ought to be placed at the back and the smaller ones in front, but to accomplish this the young rosarian will have to make many changes after plants have grown. It is well to manure plants twice yearly, late in the fall and again after the first bloom of summer. Water should be freely given during the growing and blooming season. Let the manure in all cases be well rotted, and dug into the soil.

It will pay to give a little extra attention to newly planted roses. Care in childhood often determines the constitution of the man, so it is conducive to a healthy plant. To those who love flowers, there is an interest felt in the simplest operation of culture, for he who plants a tree adopts it as his own, and delights in administering to its wants.

Sweet Peas—An ounce of sweet pea seed will plant a row 10 feet long. Plant in trenches; cover at first with only an inch of soil, then as the plants grow, fill in one inch at a time. Put them in as early as possible. Water well each night, rich soil and blossoms picked daily is the whole secret. Sparrows are fond of peas when just peeping up. A shot gun is good for sparrows.—(N. S. Dunlop, Montreal, Que.

If you cannot have suitable windows, have plants suitable for your windows.—(Mrs. W. J. McLenahan, Appleby, Ont.

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[*] Extract from address prepared for a Women's Institute Meeting.

HOW TO MAKE CITY GROUNDS ATTRACTIVE*

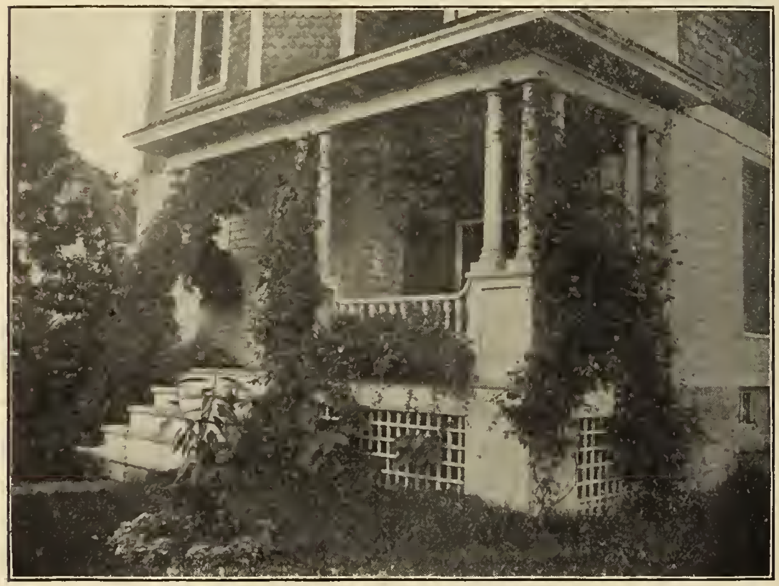
MAYOR J. A. ELLIS, OTTAWA, ONT.

WHEN planning the improvement and beautifying of the grounds surrounding a city residence, the first thing to take into consideration is the natural surroundings. The object should always be to improve them where they can be worked into the general plan, and hide the disagreeable necessary features, such as sheds and fences, which are always to be found in conjunction with city residences.

I am strongly opposed to that kind of landscape gardening which consists in planting a number of trees, shrubs and flowers at random, or dotted all over the grounds, without any regard to what the general view will be when they have grown up. The object should be to make as perfect a picture as possible, one in which the different trees, shrubs, flowers and the grass will form a part, but which when completed and placed in the proper positions will make a harmonious whole. A sure guide is one's own eye. Often we come across grounds of which we say these are lovely or beautiful, but what is lovely or beautiful with one set of surroundings may be quite otherwise in different surroundings. It is difficult, therefore, to lay down a hard and fast rule for all cases, as each place will require somewhat different treatment from any other.

The first thing we must consider are the natural defects, such as sheds and fences, which we wish to hide. These should be hidden by trees, shrubs or climbers. Next, we must consider our natural advantages, such as the boulevard and any trees or shrubs there may happen to be about the place. Having got the frame of our picture, we must decide upon how we will lay out the picture itself.

I am decidedly in favor of always having a foreground of lawn. The boulevard can often make part of this lawn and it is desirable in many cases to carry it along the sides of the house. At the back of the lot trees or tall growing shrubs should be planted, and if there is a fence climbers might be grown against it.



The Home of Mr. Jas. Thorne, Ottawa, Ont.

We have now got our background, the front of our picture, and the sheds and fences taken care of. What remains to be done is to fill in between these to the best advantage to complete the picture. The tallest shrubs should always be planted at the back, and everything gradually graded from the back and sides to the front. Everything should be so arranged that none of our trees, shrubs or flowers will be hidden but yet so they will blend together. The disagreeable surroundings must be hidden. We want a complete picture which will give several different and pleasing views from different standpoints.

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*Extract from an address delivered before the Ottawa Horticultural Society.

I am a strong believer in the massing of shrubs and flowers with open spaces from the front. Many a garden is spoiled by dotting them here, there and everywhere, so that wherever the eye rests there is nothing but a conglomerating of plants and flowers.

LEAVE PLENTY OF SPACE.

One great mistake often made is to have the trees in front of the house and grounds too close together. The reason is simple. When the young trees were first planted they were planted thickly in order to get shade right away. After a few years they grow up, and in many cases it would be far better were some of them cut out. From 20 to 25 feet is little enough for a well grown maple, for example, and it is wonderful how vastly improved most trees are when given plenty of room. When the trees in front are too close together the grass on the lawn does not get sufficient light and air, nor do shrubs and flowers which may be near them. Leave sufficient space between the trees that one may see between them the beauties of the grounds. The best trees for street planting in Ottawa are the sugar maple and elm. The soft maple and the red maple are almost as good.

There are very few good climbing vines which are perfectly satisfactory in Ottawa. The climate in winter is too severe for most of those which do very well a little farther south. For instance in Toronto Boston Ivy does excellently, but in Ottawa it very frequently kills down to the ground in winter. This is a great drawback because after killing in this way it takes the best part of the summer to attain its former growth and vigor.

The common Virginia Creeper is an excellent vine in many respects, but it too has one drawback, and that is its liability to the thrip or green fly, which often nearly destroys the leaves in August or September and makes it have a very ragged appearance, just when it should be at its best. Probably the best climber for Ottawa is a species of Virginia Creeper which is native to Ontario and is to be found growing wild around Ottawa. This has all the good qualities of the ordinary Virginia Creeper, clings much closer to brick, wood or stone, needs no training or fastening up, and above all is very little subject to thrip. It is being disseminated by the experimental farm.

Other good climbers are Dutchman's Pipe, Clematis Jackmanii, and Honeysuckles. Several varieties of roses can also be used as climbers, particularly the Crimson Rambler. Climbers can be used to grow against and hide fences and sheds, they can be trained up verandas and porches and against the sides of the house itself.

(To be concluded In June issue.)

SWEET PEAS IN THE GARDEN

R. B. WHYTE, OTTAWA.

SOW sweet peas as soon as they are received and where they will get plenty of sun and air. Do not plant where they will be shaded by trees. They do not bear many flowers if in a shady place. If you can, make your rows run north and south.

If you have good garden soil no special preparation is necessary. Spread about two inches of rotten stable manure over the surface, if you can get it; dig it in deep; it should be covered six inches deep so that none of it can touch the seed. Stretch a string the length of your row so as to make it straight, then with a hoe make a trench beside the string about four inches deep, drop the peas, one at a time, about two inches deep.

When they are in, draw back into the trench enough earth to cover the seeds two inches. With your foot press lightly along the row so as to bring the earth into close contact with the seed. If the soil is very heavy or clayey that is deep enough to cover the seed; but if light and sandy, when the plants are about four inches high, draw in over the roots another inch of soil, and if very sandy fill up the trench to the top.

If your soil is very poor and sandy it will pay to take a little more trouble in preparing it. Dig a trench a foot deep and the same width. In the bottom put four or five inches of manure, cover the manure with three inches of the top soil, tramp firmly so that the seed bed will not be too porous. After tramping down, spread an inch or two of loose soil on which to plant your seed. Sow the seed, as directed above, filling in the trench as the plants grow, until full.

THE BACK YARD BEAUTIFUL

J. M. HULL, HAMILTON, ONT.

MY garden is 25 feet by 60 feet and was very hard clay. To improve it the first consideration was to have a good lawn, which should be in the center, and graded with a slope so as to carry surplus water away.

Having accomplished this the next step was to beautify the boundaries, such as fences, walls and outbuildings. I dug borders three or four feet wide along the fence and enriched it with good soil to a depth of 18 or 20 inches. Where space is limited no trees or shrubs should be planted on the lawn. All planting should be done in the border.

Front of Mr. Hull's House

A Clump of Iris in Mr. Hull's Garden

In my garden are grape vines, Virginia creeper and honeysuckle, clematis and rambler roses, which are perennial, and improve each year. I have annual vines, such as morning glory, scarlet bean, madeira vine and nasturtium, which grow quickly and soon cover a fence.

Next to the vines I place tall plants, such as hollyhocks, sunflower, native asters, phlox, valerina, achillea and golden glow. The last named is a grand plant to hide a fence. It multiplies rapidly and is very hardy. In front of these iris, coreopsis, marigolds, snapdragon and zinnia are planted.

The border or edge has white candytuft. The garden is planted mostly with hardy plants, which are more satisfactory than annuals, and improve each year.

The banking of the foliage against the foundation, as shown in the illustration of the front of house, forms a connecting link between house and ground and gives the appearance as if the house grew there. The vines used are Boston ivy and pink rambler, which shows in bloom. It is not quite as grand as the crimson rambler, but is very pretty when in full bloom. The shrub in bloom is dentzia, Pride of Rochester, a double white and very beautiful. The other shrub is spiraea Van Houttei, one of the best shrubs, and grand when in bloom. The under planting is filled in with hardy ferns and pansy, which grow very well, as they are planted on the north side of the house.

The clump of iris is the florentina, a very sweet scented white, tinged with pale blue and yellow. The dark flower is a rich purple self-color. They make a lovely combination, as they bloom at the same time. I consider these two the best of German iris. Every garden should have at least a variety of these flowers, as they are very hardy and beautiful.

A View in Mr. Hull's Garden

THE SPRING CARE OF ROSES *

W. G. BLACK, OTTAWA, ONT.

SPRING is the proper season to prune roses, though with some plants I cut back after the first bloom in July to obtain a crop of bloom in September. In speaking on this subject, the first question is, why is pruning necessary? Why should not our rose trees grow as fine and large as they will?

The answer is to be found in the manner of the natural growth of the rose. By watching an unpruned rose tree it will be found that first strong shoots flower well the following season, but next year another strong shoot starts considerably lower down, and this soon absorbs the majority of the sap, and eventually starves the original shoot, and is itself starved in succession by another. A rose in the natural state has this happen every year, and this is one of the first reasons why pruning is necessary.

The objects of pruning are to maintain the life and strength of the plants, and to give more vigor, color and substance to the flowers, because there must be a considerable amount of strength and sap reserved for each bloom or some rose will not fully show the true colors. Each rose, in itself, must be a study for the pruner's art.

METHOD OF PRUNING.

The first care should be to cut out dead wood, and wood, no matter how thick or old, which is becoming weakly, in comparison with other stronger shoots. We should always cut back to the bud that looks outwards, and take care to see that the centre of the bush will not be too crowded, so that it can have air. Misplaced shoots, in the middle of the plant, should be cut off at the bottom. It may also break your heart to cut away some handsome branches, but it has to be done.

THE GUIDING RULE.

The answer to the question, how many buds are to be kept on each shoot, is to be found in the golden rule of pruning, that more buds are to be left on the strong shoots, and less, in proportion, on the weak ones. Like Darwin's law of the survival of the fittest, you leave the strong plant long and cut away nearly all the weaker ones. The strong grower is capable of supplying several buds on each shoot with a sufficiency of sap for good blooms, and if a due number be not allowed the shoots will either not flower or will produce coarse and ill shaped blooms. In proportion as a plant is weakly in growth, fewer buds should be left, because there will be only sufficient sap for one or two buds. The more a shoot is cut back the longer will be the new growth. To get rid of the insects that trouble rose bushes, they require to be sprayed in spring with a solution of whale oil soap, or handier, "sulpho-tobacco soap," and a firstrate thing is to turn the hose on and spray them well and frequently with cold water.

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* Extract from an address delivered before the Ottawa Horticultural Society.

Establishing Lilies

R. B. WHYTE, OTTAWA, ONT.

Could Mr. Whyte, whose garden was described in the March Horticulturist, tell me about establishing lilies. I know many amateur growers have failed. Of the last lot I got from Vermont none grew. I never have succeeded in establishing even one lily and would be glad if I could.—(Mrs. Rudolf, Seaforth, Ont.

Lilies succeed best when planted in a well drained, sandy loam, with a gravel or sand subsoil. As they should be planted deep there should be at least 12 inches of good fertile earth above the subsoil. Many growers fail from planting too shallow. The small bulb varieties like Tennifolium, Martagon and Superbum, should be planted about six inches deep, while the larger bulb sorts, like Croceum, Auratum, Excelsum, Longiflorum, etc., should have not less than 10 inches from the top of the bulb to the surface.

Lilies should be heavily mulched during the winter. As soon as the ground freezes cover with three or four inches of rotted stable manure, and over that six or eight inches of straw or light manure. Even with the greatest care many of the most beautiful forms do not become established. The Auratums, Brownii, Longiflorum, Krameri, Lennifolium, Pardalinum, and sometimes the Speciosums die out after two to four years' blooming and have to be replanted, but there is a long list of varieties that are perfectly hardy and easily grown if properly treated, including Proceum, Martagon (purple and white), Superbum, Candidum, Tigrinum, Excelsum, Hansoni, all the elegans varieties, of which Citrinum, Incomparable and Houtti are the best, all the Umbellatums, the best of this class I have grown are Tottenhami, Sensation, Grandiflorum and Aurantiacum. A very beautiful and hardy lily is Pomponium Verum, the most brilliant red in the family, but unfortunately the odor is very offensive.

Growing Sweet Peas Continuously

PROF. H. L. HUTT, ONT. AGRI. COLLEGE.

What fertilizer should be used to permit the growing of sweet peas in the same ground year after year. The ground is loam above with clay one and a half feet below ?—(G. T. Clarkson, Toronto.

It is best, if at all possible, to avoid growing sweet peas year after year on the same ground. Where attempted not only the growth of the vines but the quality of the flowers deteriorates. If the ground is so small that the location cannot be changed it might be advisable to change the soil by digging up a trench one and a half feet deep and about two feet wide and filling in with good fresh soil, which might be obtained from some other part of the garden.

The best soil for sweet peas is a good heavy loam with a fair mixture of clay. It should be enriched with a general fertilizer, such as well rotted manure, or if this is not obtainable, it would be well to apply a small quantity of some complete fertilizer, that is one providing nitrogen, phosphoric acid, and potash. As a rule the sweet pea does not require much nitrogen, as it is able to take its supply from the atmosphere. It requires a liberal amount of potash and some phosphoric acid, which can be supplied in an excellent form in unleached wood ashes. In a fairly rich garden soil a liberal application of wood ashes would probably be all that is required.

Growing Early Tomatoes

GROWING of early tomatoes and other vegetables was the subject of an address delivered recently at Leamington by Professor Taft, superintendent of farmers' institutes for the State of Michigan.

Those who live along the north shore of Lake Erie, according to Prof. Taft, should have every advantage in growing early vegetables and the best varieties of fruit. The growing of early vegetables or the forcing of vegetables in winter should be very profitable.

Crops, especially those grown out of season, are peculiarly sensitive to injury or disease. If the weather is too warm or there is a defect in the drying of the soil, or if the temperature is too cold, the growth is checked and the plant injured. The right kind of plant food should be provided and the right quantity. The great danger is in giving too little food, but sometimes too much fertilizer or manure is used and the plant makes an abnormal growth.

Stable manure well rotted is perhaps the best food that can be provided for vegetables, but for fruit growing much more care should be taken in supplying plant food. Wood ashes is one of the best fertilizers for fruit trees. The great trouble is that ashes do not contain nitrogen, and if used for vegetable growing, good partly decomposed manure should be mixed with the ashes. In the growth of vegetables for profit fertilizers must be used in most soils. Potash and phosphoric acid and nitrogen form component parts of the best fertilizers. Thus a grower who understands the elements in the soil, and who knows what his land requires, and is willing to expend a little, can generally be successful. Many of the fertilizers on the market contain a considerable percentage of valueless elements. The man who is able to get his goods on the market the earliest is the one who makes the money. Push the vegetables as fast as possible. Don't neglect them.

The best early kind of tomato is the Earliana. For late tomatoes or for factory use the Stone has given the best satisfaction. It is imperative that the seed for the early kinds should be sown before March 1 in suitable houses, with the right soil and plenty of water, and an even temperature of about 60 degrees. The plants should be transplanted two or three times and should be well filled with fruit before setting out.

The stalk should be tied to a stake and trimmed to a single stem, as the fruit will ripen earlier and the returns be better. Too much manure must not be used, and potash and phosphoric acid should be added to check the tendency to too much growth of the plant.

Castor Oil for Plants

GEORGE VAIR, TORONTO, ONT.

A LADY last year came to me with a rubber plant that wanted doctoring the worst way. It was in a sorry plight. I found the soil full of castor oil, which she confessed she had put on, a drop or two once in a while. She also had not hesitated to pour on a little weak tea.

I said I would draw the line at castor oil, but I would not mind the weak tea, if it was just the strength she gave her husband when he happened to be a little late. It is singular, sometimes, the remedies some people try on their flowers.

THE MUSHROOM BED

PERCY CASBURN, DESERONTO, ONT.

THE first step in making a mushroom bed is to collect enough horse manure. This should not be allowed to become wet and should be put under a shed to heat. Turn it several times to prevent drying.

Prepare the beds by placing boards 14 inches deep around the sides. Two or three feet will be wide enough for the beds. Put the manure in and pack firm. When the temperature is down to 85 degrees break the spawn into pieces about two inches square, make holes and plant the spawn 12 inches apart all over the bed. Cover the spawn and beat firm.

After the spawn has been in a week, cover with two inches of good loam and beat firm and smooth. Water carefully with a fine spray, with water the same temperature as the bed. Do not allow the bed to become dry, as after the mushrooms appear, which will be in about six weeks, no water can be given. If watered then the mushrooms damp off.

I generally start my first beds in early April. Where there is artificial heat the beds can be made at any season. Mushrooms require a temperature of 45 to 50 degrees.

I have had beds bearing until September. If artificial heat is applied, and a mixture of dried cow manure given with a little fine soil, covering the bed with half an inch of the preparation, and a good watering is given, a second crop will soon appear. The best soil for covering a bed is good sandy loam, such as is used for potting plants.

Asparagus roots should be planted at intervals of 12 inches in the row, the crowns four to six inches below the surface. Spring is the preferable time. Two year old roots should be used. It is not desirable to cut asparagus for the table until the second season, or two full years from planting, as this interval is necessary for the proper establishment of the bed.

Any soil that will produce a good corn crop will make a good strawberry bed.

The Mushroom Bed of Mr. Percy Casburn, Deseronto, Ont.

A MARKET GARDENER'S GARDEN

"I GAVE up growing raspberries and strawberries," said Mr. Thos. Finucan, of Toronto, to a representative of The Horticulturist, "and am giving my attention principally to vegetables. There are so many brickyards in our neighborhood that men and boys can find employment at higher wages than we can afford to pay. I have 14 acres, three of which are orchard. When my trees were small I found it a great advantage to grow beans in the orchard.

"I grow five or six acres of early potatoes, which are sprouted first in beds under glass. They are planted the end of March and transplanted about the middle of April, when the sprouts are three or four inches long. They are covered to avoid frost. I have had them ready for market by June 20, and they come in between then and July 1. They bring $1.50 a bushel at that time. About two acres are sprouted for very early potatoes in the way indicated, and early potatoes only are grown.

"I manure heavily and aim to secure early vegetables. Radishes are a specialty. The seed is sown broadcast, harrowed and rolled. The grub is kept down by the use of lime or plaster. I thin out as they are ready and keep sowing every 10 or 12 days. My land is heavy and I keep growing all season. The Scarlet Turnip and the Scarlet White Tip are the two best varieties.

"I grow a good many onions—Yellow Globe and Yellow Danvers principally, with a few of the Prize Taker. They are started in the greenhouse and transplanted into drills six inches apart, 18 inches between drills. Nitrate of soda is good for onions, When they are three or four inches high I sow it along the drills and cultivate it in, using a hand cultivator.

"Stable manure is used principally for the vegetables. I can get all I want for ten cents a yard. What I get at the east end is good because of the system of draining the water off. A little artificial fertilizer, bone dust, etc., is used, and sometimes a little land plaster. My tomatoes did not do as well as usual last year. They rotted, as there was too much rain, and a hail storm cut them up. I do not trim the vines. My vegetables are sold principally to the butchers."

THE HOME VEGETABLE GARDEN*

MRS. MARGARET CLOSE.

A SURFACE that slopes gently to the south, a light sand loam, and a good fence to keep out chickens are needed for the home vegetable garden. The soil should be broken fine, as deep as the plant roots may be expected to grow. Fertilizer, as well rotted barnyard manure, is required. Lime may be used with good results. It is beneficial on both clay and sandy soil, as it corrects acidity, makes clay soil more friable and holds sand closer together. Wood ashes are a ready source from which to obtain potash. I have used them with advantage on all kinds of soil and all kinds of vegetables and fruit.

The time for planting can only be learned by experience. The blooming of the peach is a suitable time for seeds that will resist a slight frost, such as peas and spinach. When the oak leaf breaks from its bud start beets, turnips, corn and tomatoes. Seeds that thrive only in warmer soil, as beans, cucumbers, watermelon and squash, may be planted when the blackberry is in blossom. The soil should be moist when the seed is put in.

Seeds require less depth of cover in spring than in summer. If beet, carrot, parsnip or beans are soaked over night they come up a day or two earlier. The best time for transplanting is when the weather is cloudy or rainy. I prefer the evening. Fine earth should be put closely round the roots, and if the sun comes out hot they should be shaded. I use large leaves, or paper held in place by stones. Some clip off half the leaves before planting. Cabbage require rich land, well worked, and abundant light and warmth.

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* Extract from a paper prepared for a Women's Institute meeting.

I once asked a gardener his method of dealing with the root maggot. He said, "I go out in the morning early, and wherever I see a plant cut off I search for the maggot and kill it. I have used black currant leaves to wrap the plant loosely just above the roots. For the cabbage worm use kerosene emulsion. Hot water dropped on the worm will kill it."

As soon as the rain is over the atmosphere is free of moisture and evaporation from the soil sets in. If the tubes formed by the pores are broken evaporation from the ground is much lessened. This can be done with a rake or other implement. It will also kill the weeds. In watering, the earth should be thoroughly wet, so the moisture will get to the lower and outer roots of the plant. The surface should be broken as soon as dry enough to work. If watering is necessary always do it in the evening.

A warm, light sandy soil, well supplied with humus, is recommended for cucumbers. Some start them in hot beds on upturned pieces of sod, six inches square, covered with rich soil. I never make high hills for cucumbers or anything else. I prefer level ground. Hills might do if it were very wet, but in dry weather they dry out, and if there comes a rain it runs off. Deep preparation and plenty of manure will make good potatoes on almost any soil. They require a temperature of about 60 degrees and thorough cultivation. I always set them deep in the ground so the roots will not dry out. I have had them so firmly set in the ground that I found it needed a good pull to get them out in the fall when the frost came.

THE CULTURE OF POTATOES*

W. T. MACOUN, HORTICULTURIST, CENTRAL EXPERIMENTAL FARM, OTTAWA.

IN order to obtain heavy yields, potatoes should be kept in good condition at planting time; the more dormant the better. Potatoes should be kept near the freezing point.

At the Experimental Farm at Ottawa experiments were tried for a number of years to determine what kind of sets were best. Large whole potatoes, medium sized whole potatoes, small potatoes, half potatoes, stem ends, seed ends, sets with one eye, two eyes, and three and more eyes were tried, even potato peelings being given a test. The largest crop was obtained from large whole potatoes, but the most economical kind of set was found to be one with three or more eyes and a good amount of flesh. Growers lose many bushels of potatoes every year from using too little seed. It is not an uncommon thing to find fully 10 per cent. of the hills in a field of potatoes missing, caused by the failure of the seed to grow, the reason usually being that either the seed has dried up before or after planting, or that the single eye, which is often all that there is to the set, has not sprouted.

Our practice is to make four sets of a medium sized potato, cutting it lengthwise and then across. The practice of using small potatoes for seed should be discontinued. Although fairly good crops are obtained from small potatoes it stands to reason that immature potatoes, as small potatoes really are, will not give as good results as sets from thoroughly matured, medium sized potatoes. The continued use of small potatoes is sure to reduce the crop.

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* Continued from the January issue.

THE PLANTING.

The soil being in good condition and the seed cut, the next consideration is the planting. Except for very large areas where planters are used, the best practice is to open the furrows with a double mold board plow. At Ottawa it has been found that rows two and a half feet apart is an economical distance. Experiments were tried in planting the sets 18, 16, 14, 12, 10 and 8 inches apart in the rows, but the best distance was found to be 12 to 14 inches apart. Experiments have also been tried in planting the sets one to eight inches deep, to find the best depth, and it has been found that for six years the potatoes planted in sandy loam soil one inch deep. have given the largest yield. It is believed that the reason for this is that the soil is warmer near the surface and the sets sprout sooner, thus getting the plants growing thriftily while there is plenty of moisture in the ground. This shallow planting also comes nearest the conditions of the potato in the wild state.

Although sets planted one inch deep have given the largest yields, yet this is not the most economical way to plant them, as it is necessary to destroy the weeds in order to ensure a large crop of potatoes. For this purpose it is necessary to harrow the field just before or as the plants are coming up. If the sets were only one inch deep they would be dragged out, hence four to five inches deep has been found to be the most economical depth.

The potatoes are covered with the double mold board plow, and when the weed seeds have germinated the land is levelled with the smoothing harrow, thus killing myriads of weeds which would require hand hoeing if left until the vines grew up. If the soil gets two harrowings to kill weeds, so much the better.

As the conservation of moisture is very important in obtaining a large crop of potatoes, the soil should be kept thoroughly cultivated as soon as the potatoes are up enough to show the rows. The first one or two cultivations should be deep in order to loosen the soil, but the last two or three should be shallow to avoid injuring the roots and tubers. From four to five cultivations should be given during the season. Prof. Roberts, late director of the Experiment Station of Cornell University, found that the crop increased in proportion to the thoroughness and continuance of cultivation. At the Central Experimental Farm the potatoes are grown according to the level cultivation, the plants not being hilled, and this method has been found very satisfactory. In soils which are not quite loose hilling up may be preferable, but when the plants are hilled up there is more exposure to wind and the soil dries out sooner than with level culture.

(To be continued)

Early Potatoes.—"There is no reason why the market gardeners about Toronto should not make money raising early potatoes," remarked Mr. Charles Topping to a representative of The Canadian Horticulturist. "The freight on early potatoes brought from a distance makes them come high. California potatoes cost five dollars a barrel, containing three bushels, *i. e.*, $1.67 a bushel."

Radishes will thrive in any good soil, but to be crisp and tender must be grown quickly. If a continuous supply is wanted make sowings every ten days or two weeks.

The advantages of sod mulching are: 1. To save washing on hilly ground. 2. To save depletion of soil. 3. To make the soil richer. 4. To conserve moisture by shading the soil.

The Canadian Horticulturist

The Only Horticultural Magazine in the Dominion.

OFFICIAL ORGAN

ONTARIO FRUIT GROWERS' ASSOCIATION.

THE POMOLOGICAL AND FRUIT GROWING SOCIETY OF THE PROVINCE OF QUEBEC.

PRINCE EDWARD ISLAND FRUIT GROWERS' ASSOCIATION.

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1. **The Canadian Horticulturist** is published the first of each month.

2. **Subscription Price** $1.00 per year, strictly in advance entitling the subscriber to membership in the Fruit Growers' Association of Ontario and all its privileges, including a copy of its report. For all countries except Canada, United States and Great Britain add 50c for postage.

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7. **Articles and Illustrations** for publication will be thankfully received by the editor.

8. **All Communications** should be addressed:

THE CANADIAN HORTICULTURIST,
507 and 508 Manning Chambers,
TORONTO, CANADA

THE FRUIT DIVISION.

Leading officers of every provincial fruit growers association in Canada, including British Columbia, Ontario, Quebec, Nova Scotia, New Brunswick and Prince Edward Island, have placed themselves on record as being strongly opposed to the chief of the fruit division being made subservient to the dairy commissioner. A number of these associations have passed resolutions protesting against the arrangement that has been made by the Hon. Sydney Fisher.

In his explanation in the House of Commons Mr. Fisher stated that the work of the fruit division would not be restricted, as its chief would have the same staff and would perform the same duties under the dairy commissioner as when he was under Prof. J. W. Robertson. This statement has not satisfied the fruit growers. Prof. Robertson had direction of not only the dairy and fruit divisions but of the live stock and seeds as well. Since Prof. Robertson resigned a commissioner has been appointed for live stock, one for dairying, and one for seeds, but the fruit division has been overlooked and placed under the dairy division. To Mr. Ruddick's credit it can be stated there is nothing to indicate that he sought an appointment so foreign to his regular line of work.

Fruit growers feel that while the chief of the fruit division may have the same powers he formerly had he cannot be expected to take the same interest in his work or to prosecute it with the same zeal that he would were he in sole charge and directly responsible to the public as well as to the minister of agriculture for its success. It has been intimated that there is not enough work to warrant the appointment of a fruit commissioner. There cannot, then, be enough work for the chief of a fruit division. The rapid growth of the fruit interests warrants the appointment of a fruit commissioner, who, if he is the proper type of man, will soon find plenty of work to occupy his attention. "Surely," as Mr. Brandrith writes from British Columbia, "Hon. Mr. Fisher will not go in the face of a united country and maintain an appointment that is unsatisfactory to those whose interests he is there to look after."

THE PROVINCIAL SHOW.

In deciding to continue the Provincial Fruit, Flower, Honey and Vegetable Show at Toronto while making a special grant for the holding of an earlier show at Hamilton for the fruits and flowers which cannot be shown at the later show at Toronto, the Department of Agriculture has acted in the interests of the greatest number. The management of the show held at Toronto last fall for a start made a decided success of the venture. The various organizations that were interested in it worked together harmoniously and are in a position to do much better work this year, especially as Massey Hall has been secured for the next show. It would have been unjust to have taken the show out of their hands.

On the other hand, Hamilton is in an excellent position to hold a splendid show for early fruits through which the interests of the amateur flower grower as well can be promoted. If a horticultural convention is to be held again next fall it may prove advisable to hold it in connection with the Hamilton show, as those who attend the convention are interested in amateur and not in professional flower growing. The Hamilton show can be made a big affair. Possibly the Provincial Vegetable Growers' Association may decide to hold its annual convention at the Hamilton show, which would add to its importance.

Several interesting articles from papers read at meetings of the Ottawa Horticultural Society, and one read at a meeting of the Toronto society, appear in this issue. Every month numerous papers and addresses of interest and value to amateur horticulturists, are presented at meetings of horticultural societies. Were the officers of societies to see that copies of these papers or the originals were sent to The Canadian Horticulturist their publication would add to the interest of our floral department and the papers would be of value to many people who would never otherwise hear of them. The printing of these papers would, also, serve to draw attention to the excellent work being carried on by many of our horticultural societies. Send in the papers.

Again this month have extra pages been added to The Horticulturist, this time ten, making this the largest issue we have ever published. This has been made possible by the great increase in advertisements. Very soon we hope it will be possible to continue these pages in The Horticulturist permanently, which will mean that the various regular reading departments can be enlarged and strengthened in other ways. Our readers can be of great assistance by buying from our advertisers and by telling them that their advertisements were seen in The Horticulturist. A glance through our advertising columns will prove them to be as interesting in their way as the pages of reading matter. Look them over and see if this is not the case.

Our handsome new offices in the Manning Chambers, Toronto, were greatly improved during April by lovely floral donations from friends. Two splendid ferns of the Nephrolepsis Bostoniensis and Nephrolepsis Exaltata varieties and a Kentia Belmoreana palm were given by Mr. Thomas Manton, of Eglinton, of which the Bostoniensis fern is particularly beautiful. It occupies a prominent position at the end of the editor's desk. Some lovely cut flowers were also sent in by Mr. Manton. Even roses have not been lacking, as a large boquet, containing some grand specimens of the Bride and Bridesmaid varieties, was received from Mr. A. J. Frost, of Toronto. Truly they were welcome and the kindness of the donors is appreciated.

The fruit growers of the Niagara district know what they want and they do not hesitate to ask for it. During the past two months they have had strong deputations wait on the Hon. Nelson Monteith, Minister of Agriculture, to ask for assistance in holding a series of meetings, for the conducti^n of special spraying demonstrations by Prof. Lochhead, for the establishment of a horticultural college and experimental farm, and for an annual grant for the Niagara District Fruit Growers' Association. A deputation representing the Ontario Fruit Growers' Association also waited on the Department to ask for aid in forming cooperative fruit growers associations and to have the act, which provides assistance in the erection of cold storage houses, extended for several years. It is evident the fruit growers are alive to their needs, which is a good sign.

Owing to the rapid increase in the circulation of The Canadian Horticulturist and to the many requests that have been received for back copies it will be impossible for us to furnish any more copies of the January, March or April issues of this year to new subscribers. Slightly over 400 new subscriptions for The Horticulturist have been received during the past month. These and numerous requests for sample copies exhausted the supply of the April issue early in the month, although several hundred extra copies had been ordered. While the rapid growth is encouraging it is difficult, sometimes, to provide for it in advance. If any of our readers can furnish us with spare copies of the January, March and April issues their kindness will be greatly appreciated.

A reader has called our attention to an error which occurred on page 102 of the March issue by which Mr. W. H. Bunting, of St. Catharines, is made to speak of a dust spray composed of 30 pounds of lime, 15 pounds of sulphuric acid and two pounds of sulphate of copper. Instead of sulphuric acid it should have read sulphur. It is just about as difficult for us to prevent occasional errors among the thousands of words that appear in each issue as it is for a fruit grower to thoroughly control all his insect pests. Some of them get by us in spite of our best efforts. We are, however, doing our best to improve.

NEW ADVERTISERS.

The following new advertisements appear in this issue of The Horticulturist :

Adams Furniture Co., Toronto.
R. Olmstead, Hamilton.
Elwood Tatum, West Branch, Iowa.
Ontario Agricultural College, Guelph.
J. H. Lock, Toronto.
Colling Manufacturing Co., Toronto.
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McWilliams & Everist, Toronto.
Dawson Commission Co., Toronto.
Pilkington Bros., Toronto.
A. M. Smith, St. Catharines, Ont.
Superior Manufacturing Co., Toronto.

The result of cold storage appliances on ocean steamers is well shown by a letter received by Messrs. McIntyre & Barnard, of Niagara-on-the-Lake, who recently shipped 450 barrels of apples to Liverpool on the steamer Lake Champlain. The consignee writes as follows: "The apples reached us in almost perfect condition, there being only five barrels that were in any way slack or open. The sale was the best that has taken place for the class of fruit in Liverpool this season, and we congratulate you on it." The net proceeds from the shipment amounted to about $1,500, indicating the high prices that may be realized for Canadian apples in the British market when properly packed and shipped.

The fruit growers of Owen Sound and vicinity have formed a company to be known as the Owen Sound Fruit Growing Co., for the purpose of adopting the cooperative system in growing, packing and shipping fruit.

FRUIT TREES AND BUSHES HAVE WINTERED WELL

Reports which have reached The Canadian Horticulturist from the principal fruit districts in Canada show that fruit trees and bushes have come through the winter in unusually good condition. The only loss reported is in Nova Scotia and Prince Edward Island, where the heavy snow broke down some of the trees and where mice have done some damage.

In the leading fruit sections spraying is on the increase. Where fruit is not grown extensively but little interest in spraying is being shown. There has not been a marked increase in plantations in any of the provinces.

EASTERN ONTARIO.

Mr. Harold Jones, Maitland, Ont.: Fruit trees of all kinds have come through the winter in excellent condition. Apple trees especially look bright and healthy, and the fruit bud is in good condition. With favorable weather the chances are for a good crop. Mice did some damage to trees near fences, but the injury is not serious, a few trees having portions of the bark chewed, but hardly any girdled. Strawberries are coming out bright and healthy, no winter injury even in plots that had no covering. There is practically no planting being done in this vicinity. The farmers and fruit growers are discouraged owing to losses and low prices for their fruit the last two or three years. Spraying is also being neglected in some cases. There are some of our most careful growers spraying as carefully as ever, but the tendency is to neglect the work.

THE GRIMSBY DISTRICT.

Mr. Linus Woolverton, Grimsby, Ont.: The past winter has been a favorable one for fruit. The cold has not been severe enough to injure the fruit buds, and there has been an excellent covering of snow to protcet the roots of trees and fruit crowns of strawberry plants. Indications point to an excellent fruit year, giving good profit to the fruit grower if better methods of sale can be found. Planting is always going on in the Niagara district, but not of apple trees, especially on its rich sandy loam, where even the Baldwin goes too much to wood to produce abundant crops. A great many apple orchards are being grubbed out on this account. Intelligent spraying is being practised, and power sprayers are coming into common use.

NEAR WINONA, ONT.

Mr. Murray Pettit, Winona, Ont.: Everything, including small fruits, has come through the winter in first-class shape. Prospects are excellent. The ground was covered with snow, and strawberries were well protected, and there has been little freezing or thawing since the snow left to cause injury. It has been several years since fruit came through the winter so well.

AROUND ST. CATHARINES.

Mr. W. H. Bunting, St. Catharines, Ont.: Winter has been favorable for all kinds of fruit, and except where vitality has been weakened by San Jose scale or other causes trees are in good condition. Prospects are for a good crop. Not many apples or grapes are being planted, but there is a considerable increase in peaches and cherries. Spraying is on the increase.

Mr. R. F. Robinson, St. Catharines, Ont.: Trees, vines, bushes and strawberry plants have wintered extremely well, as the wood was well ripened last fall, especially where the land was plowed early and a cover crop put in. Most varieties are sufficiently full of fruit buds for an average crop. Strawberries wintered well, but did not thrive last year sufficiently to make a very big crop, and the acreage was lower than usual owing to the difficulty in securing plants last spring. If the rot is controlled in sweet cherries this year there is excellent showing in most varieties. The acreage of fruit in this section is not increasing very rapidly for three reasons: 1. Expense of nursery stock; 2. The ravages of the winter of 1903-4; 3. Anxiety as to the possibility of controling the San Jose scale. Of peaches the Yellow St. John, Niagara, Fitzgerald, Alberta, early and late Crawfords, Toronto and Smocks seem the favorite varieties. Of plums the later varieties such as Coe's Golden Drop, Reine Claude, Monarch and Grand Duke, but not so many Japanese plums as formerly. In cherries, E. Richmond, Montmorency and English Morello of the sour kinds, and comparatively few sweet cherries are being set. The Cuthbert, and where the land is suitable, the Marlboro raspberry. Strawberries, Michael's Early, Brandywine and Williams are the most popular. There is considerable increase in spraying, especially with the lime and sulphur. Practical men now consider it an absolute necessity. However, there is yet room for much more enthusiasm in this cause.

IN QUEBEC.

Mr. A. C. Abbott, Hudson Heights, Que.: Trees, vines and bushes have stood the winter well and are in good condition. The fruit buds indicate an average crop of apples and plums. There are only a few large orchards in this vicinity, and outside of these planting is only done with a view to supplying the needs of the home or the local demand. Apples principally, with plums and a few pears, are the only varieties of fruit planted. Spraying is not on the increase. It is only the larger growers that spray.

PROSPECTS BRIGHT IN NOVA SCOTIA.

Mr. D. C. Crosley, Berwick, N. S.: Apple, plum and pear trees have wintered well, but have been badly broken by snow drifts, and mice caused great loss. Strawberries and other small fruit have wintered better than usual. The prospect is bright, but late frosts may ruin it. Last year's market prices discouraged planting of increased areas. The favorite varieties of apples are Stark, Wagner, Ben Davis, Baldwin, Gravenstein and Bishop Pippin. Spraying is on the increase, many growers believing it to be the only method of securing good fruit.

Mr. A. A. Blight, Waterville, N. S.: On account of the unusual depth of snow quite a percentage of trees were broken down. Mice also caused considerable damage, especially in orchards under sod. Small fruits and strawberries wintered well. Fruit buds indicate a good crop. There is only about 40 per cent. of the average amount of planting, growers being discouraged by low prices last season. The favorite varieties are: Apples, Stark, Gano, Baldwin and Wagener; plums, Burbank; pears, mostly winter varieties. A number are preparing to spray this season for the first time.

PRINCE EDWARD ISLAND.

Mr. A. E. Dewar, Charlottetown, P. E. I.: A lot of trees were damaged by snow, otherwise they are in good condition. There are a few complaints of damage by mice. Strawberries promise well. The season is later than usual. There is an increase in the area planted of fruit, principally winter apples, with some plums and a good many strawberries. More attention is being given to spraying.

The Standard Apple Box.

THOS. BEALL, LINDSAY, ONT.

On page 161 of The Canadian Horticulturist for April I find an article headed "A Standard Apple Box Adopted." I was pleased to learn that its adoption was a certainty and hope that the measurements given may be generally acceptable as a suitable apple box for market purposes. I regret, therefore, to see errors in the first paragraph which may cause some uncertainty about the measurements, and hope it may be corrected at once so that no further cause for discussion may remain.

The errors referred to are contained in the following quotation: "The standard size provided for is 10 x 11 x 22 inches inside measure, or 2,200 cubic inches. It holds one bushel and is equivalent to one-third of a barrel." Now, the measurement given, 10 x 11 x 22 inches, is 2,420 cubic inches, not 2,200 cubic inches, as stated. Then again, if it is intended that the box may be either 2,200 cubic inches (about 18 cubic inches less than a bushel), or may be the measurements as given in the act, which gives 2,420 cubic inches, it is an error to say that "it holds one bushel," for the first is less than a bushel and the latter more. Our standard bushel is a small fraction over 2,218 cubic inches.

As a rectangular box, although measuring an exact bushel, can not contain a bushel of apples because of the loss of space at the sides and in the angles, it is well to have the box a little larger, as has been done in this case to compensate for that loss. A standard apple barrel contains a shade over three bushels, and will hold the contents of three such boxes of apples as above referred to. I think, therefore, that the box adopted ought to satisfy all parties concerned and should not be changed.

Note.—The error referred to by Mr. Beall occurred in printing the figures 22 instead of 20. The measurements of the box should have read 10 x 11 x 20 inches, inside measurement, or 2,200 cubic inches.—Editor.

Cold Storage Buildings.

The Fruit Division, Ottawa, has received an interesting letter from Mr. Albert W. Swalm, American Consul at Southampton, England, in answer to enquiries with reference to the success of the Southampton cold storage buildings for fruit. Mr. Swalm asserts that the cold storage houses have succeeded beyond expectations and it would seem as if such fruits as the Russet, Canada Red, Baldwin and Ben Davis could be kept almost indefinitely. He draws, however, attention to the fact that there was a serious loss in storing bruised and scabby fruit and windfalls. He could detect no great difference between the keeping qualities of the American and Canadian apples.

There was no attempt to store English apples, which he asserts will not likely, under any circumstances, be used for the winter markets. They will go into consumption directly, although many of them are fair keepers and some very fine in flavor. The English apple crop is not likely to show an increase that will in any way interfere with importations from America. The most serious defect that was to be noted in the cold storage stock was the want of care in the selection and grading of the stock that was put into cold storage.

Working of the Fruit Marks Act.

An account of the working of the fruit marks Act was given to the Committee on Agriculture at Ottawa recently by Mr. A. McNeill, chief of the fruit division of the Department of Agriculture. He reported that shippers of apples had observed the law fairly well for the last two years. Last year the apples of 811 shippers were inspected, and 264 were found to have violated some section of the act, but as many of these were careless rather than criminal, he gave the figures in another form. Of this number 153 violated the section regarding marking, and 170 violated the section regarding the grading of fruit, but of those only three violated it a second time. Forty-six were found to have faced barrels too highly, but only four committed the offence a second time. Therefore, Canadian apple shippers had a high reputation for honesty of packing.

Mr. McNeill read an extract from a recent issue of the Market Growers' Gazette, of London, England, with quotations for imported apples. After quoting various kinds of American apples, it referred to Canadian apples as "Canadians, all round, two shillings more." When, as year before last, Canada shipped 1,500,000 barrels of apples, the advantage of two shillings, or even one shilling, a barrel was more than compensation for the slight cost of inspection. Now, several of the states of the United States are imitating our act, but Mr. McNeill doubted if they would be successful, as they had not centralized federal power, as we have in Canada, to make uniform laws and enforce them.

Demonstrations in Spraying.

With a view of demonstrating the effectiveness of the preparations which have been recommended for the control of the chief insect and fungus pests of the orchard and vineyard, the Minister of Agriculture for Ontario has arranged for a series of experiments and demonstrations at eight centres in the Niagara peninsula. The first round were held April 13-21 at the following places: Mr. Murray Pettit's, Winona; Mr. Ambrose Pettit's, Grimsby; Mr. R. Kelly's and Mr. Bartlett's, Beamsville; Mr. J. Fretz's, Jordan; Mr. George Robertson's and Mr. Pay's, St. Catharines; Mr. Jas. Hutchinson's, Virgil; Queenston and Niagara Falls.

The following substances were used in the plum and vineyard experiments: Copper sulphate, and the lime-sulphur wash on dormant vines, and Bordeaux and soda Bordeaux at intervals during the growing season.

Prof. W. Lochhead, of Guelph, has charge of the demonstrations.

The Price of Tomatoes.

The fight this spring between the tomato growers and the canning factories in regard to the price of tomatoes has to a certain extent ended in a draw. In some sections the growers have given in and have accepted 25 cents a bushel, the price offered by the canners, while in other districts the growers have refused to grow tomatoes for that figure. This has forced the companies to contract with growers living at considerable distances from the factories, with the result that the cost per bushel to the factories will probably be as high as if they had paid the price asked for by the growers.

In a letter received by The Horticulturist early in April from Mr. W. C. McCalla, of St. Catharines, it is made clear that the growers in that section have stuck to their guns. In part the letter is as follows:

For a time it seemed probable that our association members would get contracts totalling 60,000 bushels at 30 cents, and on the strength of this hotbeds were put up and seed sown. Negotiations, however, failed, and as many growers in other districts had contracted at the old price, some of them officers of associations who had pledged themselves not to grow for less than 30 cents, we felt that there was no hope of getting contracts at the advanced price this season. These facts were faced and discussed by our members at a recent meeting. The roll was called and in response every member present (47) reaffirmed his determination not to grow tomatoes for less than 30 cents. Many thousands of seedlings will be destroyed by our members.

While we have not secured the price asked for we feel that by loyally standing together under trying circumstances we have gained much, and are in a good position to continue the effort another year, when, with the aid of a strong provincial association we should be able to obtain our reasonable demands.

THE STAMFORD GROWERS.

The secretary-treasurer of the Stamford Fruit Growers' and Market Gardeners' Association, Mr. Thomas R. Stokes, of Niagara Falls South, has written The Horticulturist as follows:

As regards the tomato situation the Consolidated Canning Company is going to outside places to contract for tomatoes at 25 cents a bushel, supplying crates and paying freight for shipping and in some cases the plants. This must make the price of a bushel of tomatoes 33 to 35 cents. They also pay the weighing. We are wondering what kind of stuff a dead ripe tomato will be after it has been jolted in a wagon and bumped in the cars. It is not likely to be fit to make first class or second class canned goods.

Items of Interest.

The sum of $9,700 has been subscribed for a canning factory at Milford, Prince Edward County, Ont., and Bloomfield, in the same county, is talking of a similar factory owned by a joint stock company of farmers.

The county of Huron is said to lead in the number of apple trees—373,613. Northumberland is a good second with 366,381. Leeds has 93,717 and Grenville 68,145.

A cooperative canning company has been formed to operate at Niagara-on-the-Lake, where the steel works have been rented for this purpose. A new building will be erected in the fall.

California fruit growers are receiving 44 to 57 cents a box for oranges. Every box of Canadian apples, grown, graded and packed with the same care and intelligence as Californian oranges, has brought a higher price than this. It would seem then that a man does not need to leave Canada to do a profitable business in fruit, but Canadians do not yet appreciate the lesson taught to Californians by much bitter experience that it pays to export only the best.

The Fruit Division, Ottawa, has received word from British Columbia that there are very heavy importations of nursery stock coming in this spring; as much as six carloads in a single day was received of Oregon stock, all of which was carefully inspected and fumigated. Mr. Thos. Cunningham, Inspector of Fruit Pests for British Columbia, estimates that there will be 500,000 trees imported and planted in addition to the homegrown stock.

A strong deputation representing the Ontario Vegetable Growers' Association waited on the Hon. Nelson Monteith, Minister of Agriculture, early in April, and asked for an annual grant of $1,000, that arrangements be made to include an exhibit of vegetables in the Provincial Fruit, Flower and Honey Show, and that the professors at the Agricultural College at Guelph be requested to conduct experiments in the growing of vegetables. The deputation was introduced by Hon. J. W. St. John, and received a favorable reception. Mr. W. A. Emory, of Aldershot, Ont., and Mr. Joseph Rush, Humber Bay, Ont., the president and vice-president of the association, were leading speakers. Several members of the local legislature acted on the deputation and spoke strongly in regard to the importance of the vegetable growing industry.

In a recent issue of the Maritime Farmer Rev. Father Burke, of Alberton, P. E. I., pays a well deserved tribute to Mr. W. T. Macoun, horticulturist, of the Central Experimental Farm, Ottawa. Readers of The Horticulturist will agree with Father Burke when he says : Mr. Macoun has reached the stature of the best of professional investigators; he can take his place anywhere, and he will take that place and do it credit despite the first impression he gives of great diffidence and shyness in public.

As a result of the use by the fruit division of a power spraying outfit in the neighborhood of Ingersoll last year there will be two power outfits operated by private individuals in that district this season. The spraying is done in very much the same way as threshing is done throughout the country.

Grimsby's Annual Distribution

A committee from the Grimsby Horticultural Society has prepared the following list of premiums for distribution this spring : A new white hybrid perpetual rose, "Fran-karl Druschke." This new hardy rose is of German origin. It has won many prizes and appears to be the ideal hardy rose. Its flowers, which are large, are snow-white in color, with large shell-shaped petals forming a beautiful flower. This plant sold at 75 cents last year.

The other plant for distribution is the Kriemhelde Cactus Dahlia, an exquisite shell pink shading to white in the centre, undoubtedly the finest and most perfect pink cactus dahlia to date. The retail price of this plant last year was 50 cents.

The above two plants and The Canadian Horticulturist are given to members of the society.

Glad They Are Canadians

The Lindsay Horticultural Society had a most interesting lecture given at a recent meeting by Mr. T. H. Race, of Mitchell, who was sent out by the Department of Agriculture for the purpose. The subject spoken on was the social and moral influence of the home surroundings.

The description given by Mr. Race of the Canadian exhibit at the St. Louis fair, and the comparisons he made with other countries made the audience feel proud that they belonged to Canada and that Canadians are doing their mite to build up and beautify Canadian homes. After the lecture Mr. Race answered many questions from members present.—(F. J. Frampton, Secretary.

A Generous Offer

The president of the Cobourg Horticultural Society, Mr. J. D. Hayden, has offered to give $10 for the purchase of flower seeds to be given to the school children. The directors of the society have offered $10 additional for prizes for the best flowers grown from these seeds. Rules governing this competition will be announced later.

In the distribution of flowers and plants to be given away by this society there are four shrubs, including a crimson rambler, Japanese snowball, azalea mollis, and a Japanese pearl bush. There is a choice of four annuals or four perennials, with an additional choice to be made from four vegetables, a new potato, the Naught Six ; Leviathan pea, Livingstone's new dwarf tomato, and Evan's Triumph celery.

Reorganization of Brockville Society

A meeting of representative and influential members of the old-time horticultural society of Brockville was held recently to discuss the advisability of reorganization. It was found that if the society was reorganized this year it would not receive the government grant for 1905. Mr. Geo. A. McMullen was appointed secretary-treasurer. Mr. McMullen held the same position in the old society and is an enthusiastic worker.

Although no grant can be secured this year a branch committee was appointed for the purpose of beautifying the town and taking an interest in lawns, flower beds, etc., among the members.

SHRUBS AT 15 CTS. EACH !

Until May 15th we will accept orders for any of the following very popular shrubs, as described in our Catalogue at from 20 to 30 cents each, **for 15 cents each**, not less than three to be ordered in any one collection : Boston Ivy (true) 2 year plants, Weigelas (Fairy Thimbles) pink and dark red, Spireas Van Houttei, Syringas Golden Leaved (new), Hardy Hydrangeas, Deutzias (two varieties, Pride of Rochester and Gracilis or Snowdrop Shrub), Barberries (red berried), Forsythias (Golden Bell Shrub).

This is a great offer and is for first quality stock.

THE WEBSTER FLORAL COMPANY, LIMITED
HAMILTON, - - ONTARIO.

Niagara Gas Sprayers.

More Ontario fruit growers have purchased Niagara Gas Sprayers this year than ever before. This company has appointed several representatives in the fruit districts who have been very successful introducing this machine. Some of the best known growers in the province are now using it.

In a letter to The Horticulturist Messrs. Blaikie & Freeman, of St. Catharines, give the following list of growers who are using Niagara Gas Sprayers, Messrs. S. E. Fisher, W. O. Burgess, of Queenston ; James Titterington, W. H. Bunting, Louth Fruit Growers' Association, R. F. Robinson, C. E. Secord, E. McArdell, T. R. Merritt and F. Blaikie, of St. Catharines : C. M. Honsberger, of Jordan ; J. L. Livingston, of Grimsby ; Joseph Tweddle, Ira Vanduser and F. Hamilton, of Winona, and F. Fairbanks, of Oakville.

The number of these machines sold in the United States this year is already more than three times as great as the total number sold last year. A number of the state experiment stations have purchased them.

A New Departure for Peterboro.—As a substitute for its annual floral exhibition the Peterboro Horticultural Society will present every member, who becomes such by the payment of $1, with a choice of bulbs, the commercial value of which will be greater than the membership fee. The member is always sure of a prize, consisting of the pleasure he or she can derive from the growth and culture of the flowers.

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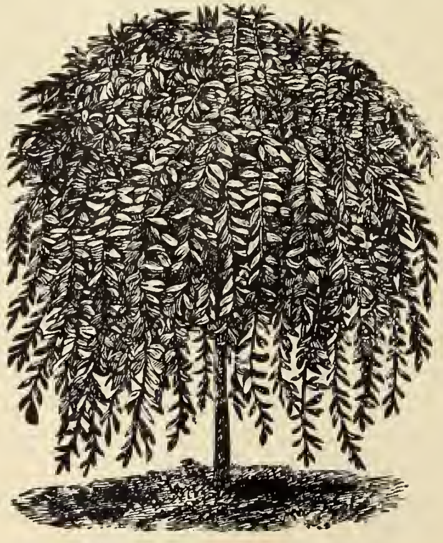
FLORIST BUSINESS FOR SALE IN BEST residential locality in Toronto. Good retail trade, small greenhouse, just the place for a beginner. A bargain if taken at once. Apply, The Canadian Horticulturist.

PLANTS FOR SALE OF THE NEW FIRST Prize Strawberry, of the St. Catharines Horticultural Society. Matilda, 50 cts. per doz by mail, $1 00 per 50 by mail, $1.00 per 100 delivered at express. Address A. M. Smith, Dominion Fruit Gardens, St. Catharines.



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Trees, Plants and Vines

of all kinds.

Write for our beautiful Illustrated Catalogue. Salesmen wanted.

HELDERLEIGH NURSERIES.

E. D. SMITH, - Winona, Ont.

Brisk Demands for Nursery Stock.

Brown Brothers Company, whose model nursery plant at Brown's Nurseries, Ont., was described in our September issue, have finished their spring packing and shipping. Their many thousand customers are strongly complimenting them on their early shipments. Their large, frost-proof storage cellars enable them to handle all their packing under cover, so that they are practically independent of weather conditions and have their stock ready to be shipped as soon as the danger of frost is past.

This not only gets the stock to customers at the proper time for planting, but also insures the trees being in prime condition, for they are under cover from start to finish of the packing work and there is no exposure to sun and wind such as marked the packing of stock under the old methods when trees were trenched in for days and weeks on the open packing grounds. Brown Brothers Company have spent thousands of dollars in perfecting this equipment, and to their well known guarantee of "the best stock that can be grown" they can now add "delivered at the proper time in the best possible condition."

I consider The Horticulturist the most reliable paper on horticulture published in Canada. —(Robt. Davis, Hespeler, Ont.

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Cast Iron Columns
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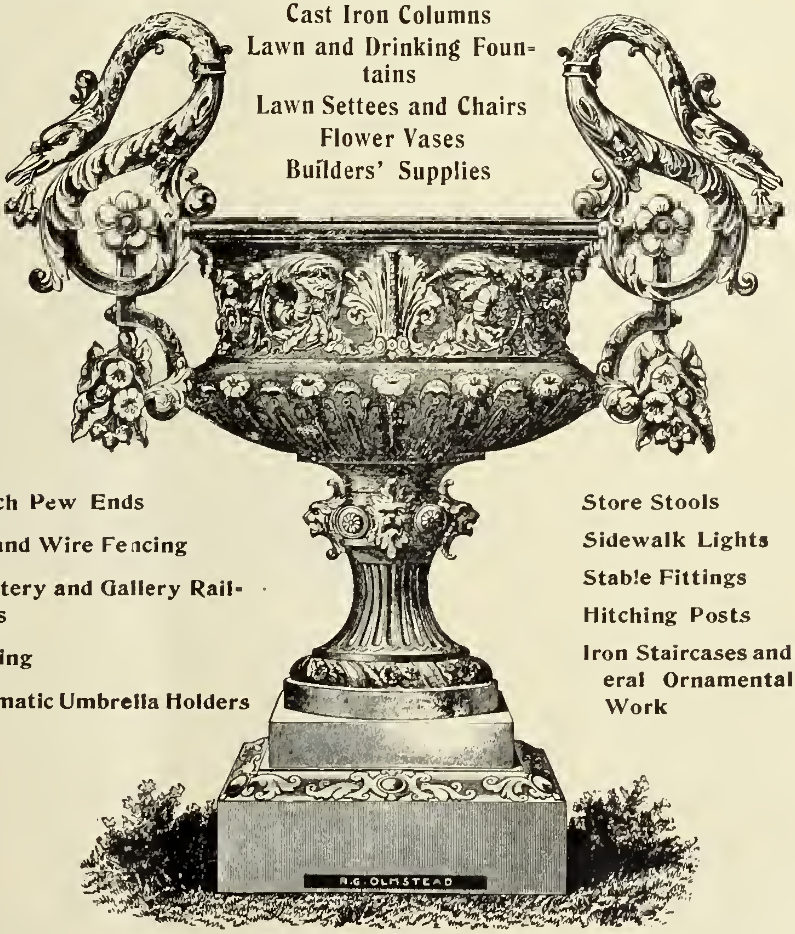

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121 King Street West. Hamilton, Ont.

Spraying Machines.

Another evidence of the prosperity of the fruit growers of Ontario is shown by the large orders for spraying machinery being placed with the leading makers. Among the growers who have purchased from the Spramotor Company, of London, Ont., are Messrs. E. M. Smith, A. Vance Cline, of Winona, and J. W. VanDyke, of Grimsby, who have secured power machines, and Messrs. M. Pettit, E. M. Smith, G. L. Brooke, of Grimsby, Robert Thompson, of St. Catharines, and W. M. Orr, of Fruitland, have purchased cart machines from the same firm. This ought to be a guarantee of the high standard of these machines. The manufacturers claim there are more Spramotor machines used in Ontario than those of all other makes combined.

Fine Dahlias and Asters.—Although Mr. J. H. Lock, of Toronto, has only a very limited space at his disposal and attends to them only in his spare time, he has succeeded in raising dahlias which have successfully competed against those grown by the largest growers in Canada. He also grew the asters which carried off the highest awards at the Toronto Industrial last year. His success as an exhibitor has created a demand for his stock.

Your paper is very valuable to anyone interested in fruit growing.—(F. T. Morrow, Mermaid, P. E. I.

Long Shipments of Nursery Stock.

The Fonthill Nurseries, at Fonthill, of Messrs. Stone and Wellington, have been engaged this spring on the largest packing they have had since they have been in the business. The firm has shipped several carloads of stock to British Columbia, Manitoba and the Territories, and has even had a considerable shipment of stock to Manuchuria, as mentioned in the last issue of The Horticulturist.

The packing operations require a force of between 200 and 300 men. Notwithstanding the severity of the past winter this firm's stock come through in splendid condition, and has given its customers great satisfaction.

Are Your Goods the Best.—Sometimes a grower of fruits finds himself unable to get all they are worth, having to take the flat market price for goods of superior grade. The man who grows a strictly first-class article should brand his package and seek out some reliable fruit dealer or grocer whose business is large enough to take his output. In this way he can command a higher price than by consigning to a general market. An advertisement in The Canadian Grocer assists a fruit grower to find the right purchaser.

The Canadian Horticulturist obtains results for its Advertisers.

Practice with Science.

The Earliest, Best Flavored and Largest Crops of

Strawberries, Tomatoes and Vegetables

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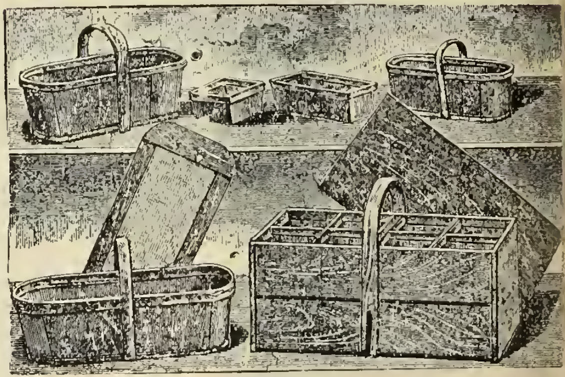

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It is convenient, economical and
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Write for sample and price.

Crates, Baskets, Georgia Fruit Case, Berry Boxes, Etc.

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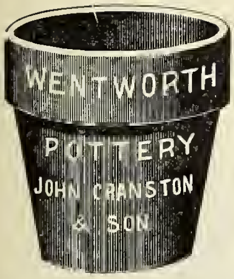

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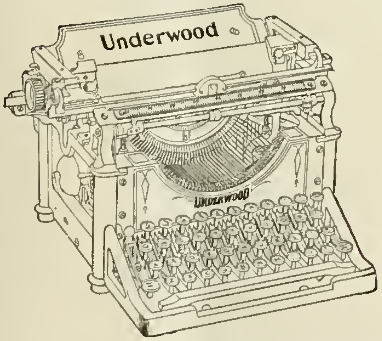

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should have a Clothes Line Reel for the yard. Clothes lines always up; never let clothes fall into the mud; never catch the unwary man passing under; easy to put clothes on; easy to take them off—**complete**—**cheap.** Write for circular and quotation.

(See our Ladder Advertisement on last page of cover of this issue.)

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Successfully shown at the leading Exhibitions in Canada. Highest awards obtained wherever shown.

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12,000 Geraniums in 3-4 inch pots.
5,000 Cannas in 3-4 inch pots.
5,000 Coleus in 2½-3 inch pots.
2,000 Salvia Bonfire in 2½-3 inch pots.
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Booking orders for fall delivery—Small Ferns, Asparagus, Plumosus Nanus, by the 1000 to the trade, also Boston Ferns in all sizes.

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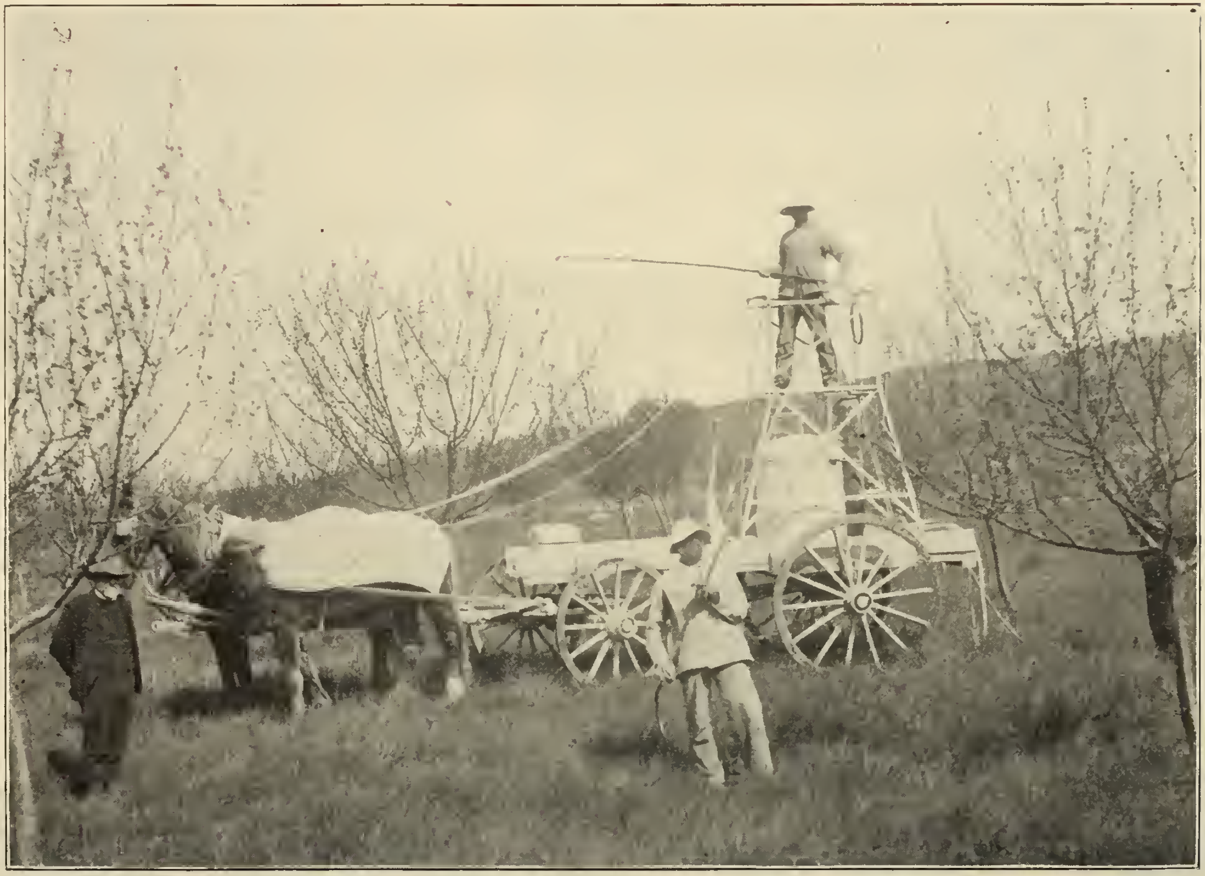

A Government Sprayer at Work in the Orchard.

One of the Ontario Department of Agriculture's power sprayers (The Niagara Gas Machine) at work at Meaford, in Mr. John Degean's orchard, is here shown. In this section about 20 growers have agreed to have some 2,500 trees sprayed by the Department's machines at an expense not to exceed five cents per tree each spraying The trees will not be sprayed more than three times. The members of this association are readers of The Horticulturist. Mr. A. Gifford, Dominion Fruit Inspector, is on the left, with his son, Mr. A. E. Gifford, holding the nozzle, and Mr. Wm. Johnson on the tower. (From a photograph taken specially for The Canadian Horticulturist.)

The Canadian Horticulturist

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SPRAYING DEMONSTRATIONS IN ONTARIO

P. W. HODGETTS, B. S. A., ONTARIO DEPARTMENT OF AGRICULTURE.

FOLLOWING the request last March of the Ontario Fruit Growers' Association that the Minister of Agriculture should place a number of power sprayers throughout the province, this matter was promptly taken up by the Department, and after some investigation two machines were placed in operation at Meaford and Trenton respectively. Both these points are centers of large apple growing sections.

According to the report of the Bureau of Industries for 1903, Grey county, in which Meaford is situated, is credited with 352,894 apple trees over 15 years of age and 200,000 under that age. Northumberland county, in which the other machine is operating, possesses 366,381 old trees and 288,669 young ones. These two counties, with the addition of Huron, headed the list for production during 1903, showing a total crop of over 2,000,000 bushels each. It follows that these sections are of great importance to the apple industry, and anything that the Department of Agriculture can do to improve the quality of the fruit shipped therefrom will materially assist those farmers who are striving to make this branch of agriculture successful.

As power spraying machines are of comparatively recent introduction into Canada it was thought wise to test at least two different types this year. There are, perhaps, four types altogether in use in the Dominion using as motive power the gasoline engine, geared direct to a pump, the expansion of carbonic acid gas, the expansion of compressed air, and the wheel-driven pump respectively. Many of these are in operation throughout Ontario, especially in the Niagara district, where the presence of the terrible San Jose scale compels the grower to spray or uproot his trees.

Readers of The Horticulturist are familiar with the well known Wallace, Spramotor, and Niagara Gas machines, which have been illustrated and advertised so frequently in these columns. Each has its strong admirers, and each, I believe, is doing good work. At Meaford one of the Niagara Gas machines, at present manufactured in Buffalo, was placed, while the Spramotor Company, of London, supplied the gasoline outfit in use at Trenton.

The gas machine, a cut of which appears as frontispiece, is run by the expansion of liquid carbon gas. The main tank, which holds the spraying mixture, is closed absolutely tight when filled, and is supplied with agitator, pressure guage, etc., on top. The gas is purchased in iron cylinders containing 25 or 50 pounds under high pressure, and when released slowly into the large tank containing the spraying mixture forces the latter out from the nozzles in a fine mist. By releasing more or less gas the pressure can be varied to suit the will of the operator, and any number of nozzles may be used.

The Spramotor machine at Trenton is

practically the same as that used by the Dominion Department of Agriculture at Ingersoll last year. The pump is double cylinder, with two speed gear and tank filler, operated by a Coldwater, Michigan, gasoline engine of two and a half rated horse-power. Two lines of hose with 12 nozzles receive ample power from the slow-speed gear. The tank with this machine has a capacity of 200 imperial gallons, which I find rather too much for the hilly orchards around Trenton.

THE DEMONSTRATIONS.

Owing to the lateness of the season when the machines were started the first spraying on the dormant trees was omitted. The first application began at Meaford May 5 and at Trenton May 11. After the initial attempts both machines ran smoothly, and at the date of writing have given no trouble. Many of the orchards in both locations are hilly and will furnish splendid tests of the practical value of these machines under trying conditions. The trees in many cases are only 20 feet apart each way and render the use of a tower almost impossible. The axe could be used to advantage in such cases and every other row should come out.

It is the aim of the Department in this work to interest the fruit growers sufficiently that they may, where already organized as a local fruit growers' association, take up the work thus begun, and having purchased power machines run them from year to year for the benefit of their members. The newly-organized cooperative associations will, it is hoped, make this one of the main features of their cooperation.

With good fruit to sell no association need fear as to the prices. The increase of the apple scab in Ontario seems to have impressed the growers with the absolute necessity of spraying, and this task, for none doubts that it is such, may be done far more thoroughly, profitably and pleasantly by the use of these powerful large-capacity machines than with the still useful hand pump.

NEW FORMS OF KEROSENE EMULSION

FRANK T. SHUTT, CHEMIST, AND W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA.

IN regard to the practical use of the new forms of kerosene emulsion, described in the May issue of The Horticulturist, we beg to state that although a considerable amount of spraying has been done, both with the lime and flour emulsions during the past month, the season is not yet sufficiently advanced to allow us to make deductions as to the strengths best and safest to use. We may, however, make the following remarks:

Lime Emulsions: All these emulsions keep excellently, only traces of free oil showing after five weeks standing. There is, as before noticed, a separation into limey layers, but these on merely shaking or stirring readily become incorporated, making a smooth and uniform emulsion. Of the many lime emulsions under trial we conclude that the most satisfactory is the one made with freshly slaked lime.

Flour Emulsions: These, with the exception of the emulsion made with scalded flour show a separation of oil on standing. Churning for five minutes, as with the Bordeaux mixture is, however, sufficient to again thoroughly incorporate the oil and make a satisfactory emulsion. The scalded flour emulsion (though, as in the case of the lime forms, showing a layer of thin oily paste) gave but slight indication of free oil. This layer very readily becomes re-incorporated and an excellent emulsion obtained.

When properly prepared no difference could be observed in the application of these emulsions, but the whitening effect on the sprayed trees, etc., of the lime forms and the absence of this feature from the use of flour emulsions was particularly noticeable.

GROWING AND HANDLING APPLES FOR PROFIT*

W. H. DEMPSEY, TRENTON, ONT.

APPLES are grown in nearly every kind of soil and location provided by nature in the Bay of Quinte district, and to a certain extent are giving fair returns for the investment. The successful orchards are those that are in more favored locations, somewhat rolling land, protected from the west and southwest winds, which cause great destruction to fruit before it is ready to pull and cause the young trees to lean to the northeast, leaving the trunks subject to sun scald and of an unsightly appearance.

The ideal soil for an apple orchard is sandy loam, with clay subsoil, well drained naturally or with under drains. This class of land has many advantages compared with heavier land. It is much easier to keep in thorough cultivation, retains moisture better in a dry season, gives quicker returns from fertilizers, although it does not retain them probably as long. Cover crops take much easier, fallen fruit is not so much damaged, and is in a much better condition for the canning factory or evaporation and is very often shipped to market. There are not many varieties which do not do exceedingly well on this class of soil. Cranberry and Blenheim Pippins do better on heavy soil, while Hubbardson Nonsuch does best on limestone gravel.

SELECTION OF TREES.

A tree of medium size, two or three years old, from a graft or bud is best, as trees that are older are slower in starting and do not make as good growth. I prefer a good one year old to a four or five year old. In four years the one year old tree will be the larger and come into bearing first.

Up to 15 years ago the orchards were all planted 20 to 30 feet apart and of late years 40 feet apart, which might seem to be a lot of vacant space. For 15 years at least I would prefer 25 or 35 feet apart, and when the trees begin to crowd, remove every alternate tree, and if the orchard has been properly cared for they will by that time have paid a profit for the care and land occupied by them. The remaining trees will show a marked benefit both in appearance and in the quantity, size, color and quality of the fruit.

FORMING THE HEAD AND PRUNING.

When the trees are set they should not be so that the head will be formed 30 or 36 inches from the ground. If trees are dried out and not in a healthy condition, I would leave three or four terminal buds, as they are much easier to start into growth than the other buds.

If all the branches are cut away close to the trunk adventitious buds would have to be depended on for forming the head, and as these might stand out anywhere along the trunk the top would not be as symmetrical as when four stubs were left. During the first season the tree will require little if any pruning, although if a tree is forming a poorly shaped head a little judicious pruning will often be helpful in making a uniform school. In early spring the trees should be looked over and whatever branches are not required in forming a good head should be removed, care being taken not to remove too much. The less pruning done the sooner the trees will come into bearing, and if the trees are quite thick when they come into bearing fruit the weight of the fruit will make them nearly thin enough.

Many growers seem to think they are not pruning unless they remove everything from the centre of the tree so that there will be no fruit except at the outer ends of the branches. Sometimes it is 10 feet from the trunk to the first fruit spurs, causing the tree to split in pieces although there are only a few bushels of fruit on it. I prefer to have fruit spurs start at the trunk of the tree, taking whatever is removed from the outside of the tree so that the sunlight can get in to the fruit. Never do more pruning than is necessary. Rather have an orchard not pruned at all than prune it too severely. With little or no pruning the tree will usually load heavily, and with the application of fertilizers the fruit will come to a fair size or a size that will carry to a foreign market in good order. Heavy pruning, on the other hand, forces the tree into too much wood growth and very little fruit of a large size that will not carry to market in as good condition as medium-sized fruit.

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*Extract from an address delivered at the recent convention of the Pomological and Fruit Growing Society of the Province of Quebec.

PICKING THE FRUIT.

Apples are much easier gathered from trees that are loaded all through. There is less danger of breaking such a tree in pieces. The ladder may be placed against the outside branches, then put through the centre and the whole tree thus cleaned without climbing through it, while the trees with the fruit out far are frequently split with the weight of the picker, which should in all cases be avoided.

If the soil at the time of planting the trees contains a liberal amount of humus and plant food it will not be necessary to apply manure until the trees begin to bear. If the young trees make too rapid growth they will be more subject to blight and fungus growth each season. If they are on land deficient in plant nutriment a light coat of manure should be applied, and when the trees have come into full bearing stable manure may be applied at the rate of 10 to 20 tons to the acre with good results. When the soil is deficient in humus and nitrogen, and the danger to the trees will be lessened, it will be found beneficial if it is supplemented with 50 or 100 bushels of unbleached wood ashes and 300 to 500 pounds of ground bone to the acre. If ashes cannot be obtained 200 to 300 pounds of muriate of potash may be substituted. The stable manure may be spread on any time during the winter and the fertilizers may be used early in the spring.

PROMOTING WOOD GROWTH

LINUS WOOLVERTON, GRIMSBY, ONT.

SINCE June is the month for wood growth it is the time for constant cultivation of fruit plantations. Unless vigor of growth in tree or plant is kept up in the early summer there will not be sufficient nutriment stored up for fruit and fruit buds in the latter part of the season. In the apple orchard, for example, unless about one foot of new wood growth is made by the middle of July fine apples need not be expected.

My plan is to plow my orchard in the fall and keep it worked in the spring until July 1 with disc and harrows; after that to cease cultivation until after harvest. If growth is too vigorous I seed down for a few years. In rich, sandy loam, with plenty of moisture, I find the apple tree goes too much to wood, and Baldwins go for years without producing a crop. Such trees should be put down to grass for a term of years. The cherry orchards should be cultivated in order to keep up a healthy wood growth, but not deeply. In most soils a good disc and a good set of iron harrows will do the work of thorough cultivation to a depth of about three inches.

The vineyard needs an occasional plowing with a one-horse plow, finishing with the horse grape hoe and the hand hoe, but if plowed away the earth should be plowed back again as soon as the hoeing is completed. Respberries and blackberries need similar treatment. The canes are often much injured by deep plowing away, which should be carefully avoided.

SPRAYING EXPERIMENTS IN THE NIAGARA REGION

PROF. W. LOCHHEAD, O. A. C., GUELPH.

THE most serious enemies of the fruit grower in the Niagara region are the San Jose scale, the cherry aphis, the codling moth, grape rots, the plum rot and the apple scab.

For several years strenuous efforts have been made to control the San Jose scale with such materials as whale oil soap, crude petroleum, and the lime-sulphur wash. Success has followed the application of the lime-sulphur wash in particular, but on account of the trouble involved in boiling the wash it was thought advisable to try a method of preparation which does not require prolonged boiling by steam or fire. Besides, it was deemed advisable to know the effectiveness of certain new scale remedies which have recently appeared, viz.: Carlson's mixture, Pratt's Anti-scale Remedy or Scalicide, and the kerosene-limoid mixture.

The grape rots have also caused much loss during the last three or four years. The black rot is specially destructive in the St. Catharines district, and promises to give much trouble in its control. The downy and powdery mildews are the destructive rots farther west in the Grimsby-Winona district, and the grape growers in that district are decidedly anxious as to the future. The cherry aphis and plum rot are also difficult to control and cause much loss in many orchards.

The Minister of Agriculture, realizing the serious nature of the attacks of these vineyard and orchard enemies in the great fruit-growing regions of Ontario, decided to arrange for a series of experiments and demonstrations this season in spraying at eight places from Winona to the Niagara river. The main object of these experiments and demonstrations is to test the effectiveness of the preparations which have been recommended for the control of the chief insect and fungous pests of the orchard and vineyard.

THE WASHES USED.

The following substances will be used in the plum and vineyard experiments: Cop-

Sacred Heart Church and Presbytery, Alberton, Prince Edward Island

The beautiful home of Rev. Father Burke, President of the Fruit Growers' Association of Prince Edward Island and the foremost among Maritime agricultural leaders.

per sulphate and the lime-sulphur wash on dormant vines, and Bordeaux and soda Bordeaux at intervals during the growing season.

The following substances were used against the San Jose scale: The lime-sulphur wash (unboiled), the kerosene-limoid mixture, the Carlson mixture, and Pratt's Anti-scale Remedy.

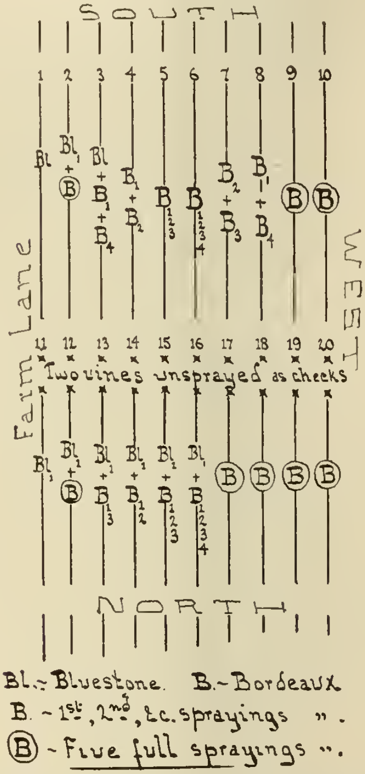
The first round of experiments and demonstrations, as announced in the May issue of The Horticulturist, was held as follows: April 13, at Mr. Murray Pettit's, Winona; April 14, at Mr. Ambrose Pettit's, Grimsby; April 15, at Mr. R. Kelly's and at Mr. Bartlett's, Beamsville; April 17, at Mr. J. Fretz's, Jordan; April 18, at Mr. George Robertson's and Mr. Pay's, St. Catharines; April 19, at Mr. Jas. Hutchison's, Virgil; April 20, at Queenston; April 21, at Niagara Falls.

On account of the large extent of territory to be covered the owners of the vineyards and orchards in which the experiments were conducted were asked to provide facilities for the preparation of the chemicals used, such as hot water or steam, a kettle, two or three barrels, and a small amount of lime, sulphur, and copper sulphate. The owners were also asked to have the grape vines cleaned of old bark.

The spraying operations for the remainder of the summer will be directed mainly against the grape rots. It is hoped that the results will indicate (1) the proper time to apply the Bordeaux, (2) the number of applications which will be necessary for the production of clean grapes, (3) the most effective sprayings of the season's operations, and (4) those sprayings which may be omitted with safely.

The bluestone application (four pounds to 40 gallons of water), according to the Ohio authorities of doubtful value, is made in the spring while the vines are dormant, the first Bordeaux (B1) spraying about the first week in June when the new growths are from 12 to 18 inches long, the second Bordeaux (B2) after blossoming about the first week in July, and subsequent applications at intervals of 10 days or two weeks.

DIAGRAM OF MR. MURRAY PETTIT'S EXPERIMENTAL VINEYARD AT WINONA.



The accompanying chart of the experimental vineyard at Mr. Murray Pettit's will show clearly the varied nature of the applications and the information which we may hope to get from the experiments. Mr. P. W. Hodgetts, B. S. A. of the Department of Agriculture, has consented to act along with me in carrying out these experiments, and he will probably conduct the July and August experiments.

Barnyard manure, made chiefly from grain and hay, is not well balanced in fertilizing ingredients for strawberries.

THE CODLING MOTH

BULLETIN No. 10 of the Ohio Agricultural Experiment Station, which has recently reached The Horticulturist, gives some valuable information respecting the codling moth. The following summary contains the substance of what appears in the bulletin:

1. Active, mature larvae of the codling moth may be found in Ohio orchards from June 30 to October 13, which signifies that the fruit is more or less subject to attack during the greater part of the growing season.

2. An average of results from unsprayed plots in three widely separated orchards shows that had no spraying been done during the past season 43 per cent. of the picked apple crop would have shown injury from codling moth at harvest. In addition, a considerable quantity of fruit fell during the summer, a large percentage of which was wormy. The results from sprayed plots averaged only nine per cent. wormy fruit. In other words, 91 per cent. of the fruit from sprayed plots was free from injury, whereas, of that from unsprayed plots, only 57 per cent. could be so classed.

3. The figures from each of three orchards indicate that a large number of sprayings are unnecessary to control this insect. In some cases the very early spraying and in others the very late apparently did not accomplish much. As early spraying with Bordeaux is necessary to control the scab, and as the poison may be applied in it at a very small additional expense, it is best to continue the established practice of spraying as soon as the petals have fallen, using both the Bordeaux and poison. After two or three sprayings of the combined mixture the Bordeaux should be discontinued. After this at least one and possibly two applications of the arsenate of lead should be made at intervals of two weeks.

4. Arsenate of lead is superior in killing power to arsenite of soda, which is probably due to its sticking qualities.

5. Being applied in Bordeaux mixture does not reduce the effectiveness of arsenate of lead.

6. Damage from apple scab can be largely avoided by two or three applications of Bordeaux mixture.

7. Regardless of the care taken in its preparation, Bordeaux mixture sometimes injures foliage, especially when the application is followed by wet weather.

8. The keeping quality of apples attacked by codling moth and apple scab is very seriously impaired.

Bandaging Trees

PROF. H. L. HUTT, O. A. C., GUELPH, ONT.

At what season should apple trees be bandaged? What material is used and where can it be obtained?—(W. T. N., Zenda, Ont.

I shall take up your questions in the order given. First, June is the time to put burlap bands on the apple trees for the codling moth. This should be done before the middle of the month.

Coarse sacking or ordinary burlap is the material best suited for this purpose. It can be obtained at dry goods stores, where it often comes as the outside covering on goods sent from wholesale houses.

Set More Trees.—Farmers should plant more fruit trees, say up to five acres on a 100-acre farm. New markets are being opened up in Europe, which, with our own northwest, will create a demand for first-class fruit, which will increase much faster than the supply.—(Frank J. Barber, Georgetown, Ont.

The only spraying I have found necessary so far has been for oyster shell bark louse, which I have treated successfully, with a thorough spraying of fresh slacked lime, in March.—(G. H. Hutton, Easton's Corners, Ont.

RESULTS FROM POWER SPRAYING

"THE power sprayer I purchased last April," said Mr. R. H. Lewis, of Hamilton, to a representative of The Horticulturist, "has given me excellent satisfaction. With it I spray over 6000 trees and 4000 grape vines. Previous to last spring I had done the spraying for four years with a hand sprayer. These hand sprayers should be called 'man killers,' they are so hard on the people who operate them. Three men were required to use the hand sprayer. To spray three acres of solid fruit required seven days, during which we usually had plenty of breakdowns. Using the power sprayer last year only two and a half to three days were required and the work was much better done.

"With the hand sprayer I found it impossible to apply the spray thoroughly, as the force was not sufficient to send the spray to all portions of the trees, especially the large ones. This meant that in the case of plums the center of the trees were frequently not reached by the spray and the fruit was usually badly damaged. With the power sprayer the spray penetrated to every part of the tree and consequently the results were better than those obtained with the old hand pump.

"My sprayer obtains its power from the hind axle. I drive between the rows of trees with a man on each side of the sprayer, each man spraying the trees on his side. Six and sometimes eight nozzles are used. In this way the work is done rapidly and thoroughly. It is possible for one man to drive the team and spray the trees on one side, but it is hard work unless the trees are very small.

A SAVING IS MADE.

"In addition to the saving of time that is made when the power sprayer is used there is a big saving in material. Formerly I used to apply 250 pounds of vitriol, while this year I only used 100 pounds, but I used 50 pounds of caustic soda in addition. I am a strong believer in the caustic soda and sulphur wash used before the buds appear and while the wood is dormant. It is, however, a mixture that has to be used very carefully. The caustic soda cleans the trees of every kind of fungus and rids them of all insects, giving the trees a very nice gloss. Cherry trees, after the mixture is applied, look as if they had been polished. This mixture can be applied too strongly, however, in which case the trees will be injured, but the use of reasonable proportions gives good results. I use 15 to 17 pounds of caustic soda to 100 gallons of water. I have had no experience in San Jose scale, but believe that this mixture would be an effectual remedy for the scale.

"I generally spray twice, before and after the buds appear, and plums, pears and grapes four times. For the plums and pears I use the Bordeaux mixture except for the first application, when caustic soda is used. Peaches are first sprayed with the caustic soda and sulphur solution in the proportion of 30 to 35 pounds of sulphur mixed with 15 to 17 gallons of water. The second application is made with the Bordeaux mixture. Last year I applied the caustic soda mixture to part of my trees. The trees on which it was used produced peaches, but those on which I had put the Bordeaux mixture both times did not yield. This year I intend to use the caustic soda application on all my trees.

"I have about 135 cherry trees of the Early Richmond and Large Montmorency varieties. I sprayed three times with Bordeaux mixture, there being five to seven days between each application. It requires about one hour each time to spray these trees. The total cost, including the time, labor and value of the mixture amounted to about $3. As a result of the spraying I secured over 700 baskets of cherries. I sold the crop for 85 cents to $1 per basket, and it netted me nearly $700. One of my neighbors had about 300 cherry trees of the same varieties and picked 15 baskets of poor fruit, and other fruit growers in the district east of Hamilton, who did not spray, obtained about the same results. I am satisfied that my success in securing a crop was due to the thorough spraying. In view of the returns I have secured I have concluded that it pays handsomely to spray.

"Before I purchased my sprayer I was told that it would be difficult to maintain the pressure when it was derived from the rear wheel, but I experienced no trouble of this kind. It was possible to work the pressure up to 175 pounds in five minutes. The sprayer could remain opposite one tree for several minutes without the pressure decreasing to any great extent."

Enemies in the Orchard

J. O. DUKE, RUTHVEN, ONT.

I FIND oystershell bark louse one of the most difficult pests to handle. Spraying with whale oil soap may check but does not eradicate it. I have used lime, salt and sulphur for the past two years and hope to have better results from this.

The peach tree borer is easily kept out of an orchard by carefully digging the borers out with a knife. This should be done twice a year until the tree is five years old, after which, if the trees have been kept clean and have no scars at the base, the borers will have difficulty in securing a lodgment.

In the spring, during the months of April and May, I have the earth removed from the base of the tree. In doing this all large borers can be easily found and dug out. In a couple of weeks I send a man over the orchard again. This time most of the small grubs can be found, their presence being indicated by their excreta appearing as fine brown sawdust at the entrance to their hole. This man also paints the tree from the ground to the height of a foot or so with a mixture containing equal parts of whale oil soap, crude petroleum and water. In a week or 10 days the trees are again gone over and banked up six or eight inches above the level of the ground, each tree being carefully inspected, before the earth is put around it, for signs of grubs that may have been overlooked. This final banking up should be done before June 10, as that is about the time the borer moth begins to hatch in Essex county.

In October I like to go over my trees to bank up for the winter, always keeping on the watch for a stray borer. I believe that trees painted with the mixture mentioned are practically insured against mice, as none of my trees that were painted in the summer of 1903 were girdled, while a few rows that were missed were nearly all taken.

Spraying Trees When in Bloom

PROF. H. L. HUTT, O. A. C., GUELPH, ONT.

A number of farmers in this locality are advocating the spraying of apple trees when in full bloom. One prominent fruit grower cites an instance where a man had started, but stopped part way up a row, being warned that the blossoms would not mature. That fall the fruit on the sprayed trees was far superior and the place he left off could be distinctly seen. Kindly give me your opinion as to spraying when in bloom.—(C. F. Bailey, Colebrook, N. S.

I cannot recommend spraying while the trees are in bloom, for this would mean the destruction not only of the honey bees but the wild bees which help to bring about fertilization of the blossoms. The good results obtained from spraying would no doubt have been just as marked if the trees had been properly sprayed before and after blossoming.

From your statement it appears that trees sprayed while in bloom show marked results over those unsprayed. This is nothing more than might be expected, still it does not show how many bees were destroyed through spraying at such a time. If the practice of spraying when trees are in bloom became at all general it would in time lead to lighter crops through the destruction of the bees and lack of fertilization of the blossoms.

Cooperation in British Columbia

THE British Columbia Fruit Growers' Association has a programme at each of its quarterly meetings, including addresses and papers by persons competent to deal with the questions allotted to them. In addition to the regular quarterly meetings supplementary meetings are held in newly settled districts, the object being to point out the proper modes of planting, pruning, spraying and cultivation of orchards, advising varieties of plant, giving instruction in grading and packing fruit, and assisting to have the orchards established on a proper basis.

In the older districts the meetings are to encourage the spirit of cooperation, which does not stop at marketing, but includes cooperation in planting. The growers in a section join in planting the same varieties, thus establishing a name for say Spitzenburgs from Salmon Arm. Cooperation in purchasing supplies, such as boxes, spraying material, fertilizers, etc., is also encouraged, as well as in marketing the fruit. The first efforts were directed to securing uniform quotations and the success encouraged the association to widen its field. The result is four cooperative shipping unions have been formed, with others ready to fall into line.

The association has three vice-presidents, one in each of the natural divisions of the province—Vancouver Island, Lower Fraser Valley, and the interior. The vice-president on the island presides at all meetings on the island; the second vice-president on the lower Fraser; the president in the Okanagan valley, and the third vice-president in the Kootenay valley. The secretary is the only paid member of the executive who attends all meetings, thus saving travelling expenses.

Since the annual meeting in January three meetings have been held, one of the former class at Matsqui, and two of the latter at Chilliwack and one at Mission City. Meetings to encourage cooperation were arranged for Port Hammond, Burnaby and Langley in March, and at Salmon Arm, Enderby, Armstrong, Kelowna, Peachland and Summerland for early in May. These meetings were a combination of the two classes. Meetings will also be held in July in the Kootenay valley.

Let the Robins Live.—Robins have not become so troublesome that I would like to see them destroyed. They take a large number of our cherries, and are increasing rapidly in numbers, so that it may soon become necessary to destroy them. They should not be protected by law when they become so numerous as to destroy our crops. I would not wish to drive them away as long as they leave me a reasonable portion of the fruit.—(W. W. Hillborn, Leamington, Ont.

The British Columbia Fruit Growers' Association has adopted a resolution in favor of establishing an experimental orchard on Vancouver Island. They also decided to ask the provincial government to enforce section seven of the rules of the Board of Horticulture which gives inspectors power to destroy or ship to the grower any fruit not considered merchantable by reason of scab or other defects.

Our provincial fruit growers' association was only instituted last year, but a good deal of interest has already been shown and the membership is steadily increasing.—(Henry Wilmot, Oromocto, N. B.

THE SHIPMENT OF APPLES

"WHY should fruit growers have to ship even their peaches by express," asked Mr. E. D. Smith at a fruit growers' meeting held at Beamsville. Fruit sent by freight should reach points within 100 miles the next day. There is needless delay at Toronto for fruit shipped from the Niagara district. The Railway Commission has promised consideration, but he questioned if much will be done, unless by cooperation fruit growers bring pressure to bear on the commission. They spend thousands of dollars for fruit carriage and the railway companies will not even furnish proper cars. The cars on which the apples are shipped get too hot. Prof. Robertson tested the cars and found a temperature of 85 degrees. It was said the apples spoil on shipboard, but more damage is done on the cars.

Apples remain in barrels in the orchard for some time without spoiling, but they soon spoil on board ship because there is not proper ventilation. Apples sent by ventilated ships are probably worth one dollar more per barrel. There should be an act of parliament to compel ventilation, as is done in the case of cattle ships. Thermographs should be provided. Proper ventilation would save $1,000,000 a year to the apple growers of Ontario.

Fruit growers must raise a good article. If half the fruit was dumped out growers would get more money for the other half. The trees must have rich ground and the fruit should be thinned out. Peach trees could be thinned for two cents a tree. Mr. Smith said he had thinned some trees from 12 baskets to five and it paid, as he secured larger and better fruit.

In regard to the size of apple barrels there are two sides to the question of uniformity. Ontario has a reputation for large barrels, and there are no extra charges for freight, handling, etc., in which way more than enough is realized to pay for the extra 16 quarts of apples. Baskets are required by law to be uniform in size, but the act is not carried out. Cooperation is needed among the fruit growers to remedy these defects.

After hearing Mr. E. D. Smith speak of the necessity for cooperation in shipping fruit, Mr. A. N. Brown, of the State of Delaware, expressed surprise that the Niagara shippers have no ventilated cars or fruit trains. The growers in the States, he said, have been through like experiences and had to deal with the Pennsylvania railway monopoly. He advised Ontario growers not to go to the Railway Commission but to appeal direct to the railway companies. They in Delaware had, after a fight over the question of routing which threatened to kill their industry, secured a market train which carried their fruit at the rate of 35 miles an hour. The Niagara shippers should have such a train to Toronto. The rate on such a train was high, but not nearly so high as by express.

New Seedling Pear.— A splendid variety of pear is being grown by Mr. E. C. Beman, of Newcastle, samples of which were shown at the last Provincial Fruit, Flower and Honey Show in Toronto. It ripens during the last of October or early in November. These trees have been growing in Mr. Beman's orchard for 12 or 13 years, and he has some that are top grafted. It bids fair to be a very productive variety, and the fruit is of large size. The quality is not quite as good as the Sheldon, but is similar. The fruit is juicy and delicious, and it promises to become popular.

PICKING STRAWBERRIES

THE strawberry picking season will soon be here. The illustration on this page shows a portion of an 11 acre patch of strawberries on the fruit farm of Mr. J. O. Duke, of Olinda, Ont., with the pickers at work. "I employed 25 to 40 pickers each day," writes Mr. Duke to The Horticulturist. "They were placed under a foreman, who saw that the berries were picked right and that the rows were picked clean, each picker having a row to herself, which was thoroughly done before another was given. The rows were numbered, and as each row was taken the number was placed in a book opposite the name of tne picker.

"I find this method a great advantage to keep the pickers on their own rows. There are always some pickers who, if not watched, will run all over the patch. Each picker is provided with a carrier holding six quart boxes, and is instructed to pick into all the six at once and not to fill one box at a time, to be careful not to have any holes in their baskets, and that the berries must be put in carefully and compactly.

"The fruit is packed in crates holding 24 quart boxes for shipping. I pay two cents a box. I grow the earliest ripening varieties and find Mitchell's Early, Bedar Wood and Crescent about the best. They don't grow heavy crops of fruit, but catch the early market. For a late berry Williams is hard to beat, being very firm and very productive, though late. Being one of the first growers in Canada each season to pick berries I always find a market at satisfactory prices to the east and north."

Pine Twigs For Currant Worms

THE use of pine twigs to keep off the worm from currant and gooseberry bushes is recommended by Mr. T. R. Pattillo, of Bridgewater, N. S.

"Some years ago," he writes, "I read an article bearing on the subject from the pen of a lady amateur gardener who had successfully used them and was anxious others should know of it. I put it into practice, with the result that I have had no trouble with the pests for the past seven years. There is no skill required, but the twigs must be used in time.

"When the bushes begin to bloom I hie to the woods for my supply, getting them from one foot to three feet long, and placing them in and out through the bushes, let-

Strawberry Pickers at Work for Mr. J. O. Duke, of Olinda.

ting them rest on the branches so that the wind will not blow them down. I put several on each large bush and let them remain till the season is over. A lady friend tried my method last spring on her currants, overlooking the necessity of putting them on the gooseberries. As a result she found the latter stripped of every leaf while the currants were intact."

Dandelions in Lawns

PROF. H. L. HUTT, O. A. C., GUELPH.

Can you give me any remedy for dandelions in lawns ? Toronto lawns are absolutely yellow with them. Like the poor, they are always with us in season.—(T. McGillicuddy, Toronto, Ont.

The best remedy for dandelions in the lawn is to grow grass in their stead and to grow it so abundantly that the dandelions will find no quarter. It is useless to attempt to spud them out, for this only affords a suitable place for the lodgment of seed which is blown about freely, and really tends to aggravate the trouble rather than remedy it. It is practically impossible to rid the ground of dandelions where there are so many going to seed all around and thousands of seeds being carried hither and thither by the wind.

Our practice has been to apply a top dressing of well rotted manure in the fall to the poor spots in the lawn where the dandelions are most plentiful, and in the spring, if the grass is not thick enough, to rake in some fresh grass seed. We have found this to give wonderful results, the dandelions being almost crowded out by the luxuriant growth of grass, and it has often been possible to trace the boundaries anywhere on the lawn where such applications have been made, not only by the apparent absence of dandelions, but by the luxuriant growth of the lawn grass.

But why try to get rid of the dandelions? What can be more beautiful than a lawn brilliant with their beautiful bloom? It is simply because we have them in such abundance that we despise them. If they were as scarce as the English daisies we would import them by the thousands. Is it not another case of familiarity breeding contempt?

Window Box Plants

WM. HUNT, O. A. C., GUELPH.

Many of the plants that have to be taken from indoors during the summer can be made use of in window boxes, hanging baskets, veranda boxes, or vases on the lawn. The Tradescantias (Wandering Jew), Umbrella plant, Cordylines, Ferns, German or Cape Ivy, and many varieties of Begonias or Fuchsias—if in flower—make splendid plants for window boxes on the east or north side of the house, whilst Coleus. Vincas or Perriwinkles, especially the variegated type, will help to fill boxes or baskets for more sunny positions. By paying a little attention to the different positions suited to plants during the hot months of summer, many of them can be grown and will improve their condition very much by the time they are wanted for the window again in winter. Plentiful and copious sprinklings with water on the foliage of Palms, Rubber plants, Cordylines and similar plants is necessary during summer. Azaleas also should be sprinkled every morning or evening when the weather is hot and dry.

We gave up planting trees on Arbor Day about 10 years ago because we had as many as our school grounds would accommodate. We plant 15,000 flowers and vines every year in our school grounds on Arbor Day. —(James L. Hughes, Public School Inspector, Toronto.

I would advise every fruit grower to spray his orchard.—(Fred. Heeney, Ingersoll.

AUTOMATIC VENTILATION IN PRIVATE CONSERVATORIES

ROBT. W. KING, C. E., TORONTO, ONT.

THE practicability of automatic ventilation in private conservatories was raised a few years ago. It was thought that it would be decidedly advantageous, but it was doubtful whether the average gardener would have sufficient mechanical intelligence to care for the machines. The experiment has been tried with success during the last two or three years.

The pioneer experiment is particularly interesting from the fact that there is, first what may be termed an ordinary greenhouse on a miniature scale in which the heat is controlled by hand valves in the usual way, with the ventilation automatic; secondly, there is a show conservatory, apart from the greenhouses, connected with and opening into the residence in which plants grown in the greenhouse are displayed when in bloom. In this apartment the ventilation is controlled by hand, while the heating pipes are controlled automatically.

In fitting out this establishment cost was a secondary consideration, the main object being to obtain what was best for the purpose even though subject to some experimental expense. Before proceeding to further describe this greenhouse it may be interesting to refer to the way its present arrangements were brought about.

As in all such cases an architect was first employed. When it comes to the designing of a common greenhouse in which bloom can be grown satisfactorily, the ordinary architect usually exhibits himself completely at sea. In the instance referred to the building itself was not so bad, though the wooden wall plates surmounted by heavy, wooden mullions, carrying wooden gutters equally weighty, and a double row of purlin supports, five feet centers, might with advantage have been replaced by some of the more modern light iron or steel construction. When it came to the erecting of the internal arrangements the gardener, who probably had never been consulted unless in some high handed way, objected, and at his request the hand ventilation system that had been contracted for was replaced by automatics.

This greenhouse is 60 feet long by 19 feet wide, running north and south. This enables ventilation on both sides of the roof to be successfully used during winter months. When houses run east and west, and double ventilation is used, it is necessary in winter to disconnect shutters on the north side.

The house is divided into three compartments for the purpose of running different temperatures and degrees of ventilation. The first compartment is used for orchids, carnations, and bedding plants. This compartment is 24 feet long, separately controlled by automatic ventilation on both sides of the ridge. The ventilating shutters are hinged at the headers, the spacing being so arranged that the shutters on opposite sides of the ridge are not opposite one another. This compartment has also side ventilation on both sides and some base ventilation under the benches. The second compartment is used for forcing general conservatory stock, bulbs, etc. Its ventilation is similar to the first.

The third compartment, or rose house, is 15 feet in length, from which is deducted a liberal allowance for pathways and side benches, on which are grown cinerarias and numerous other plants. The rose beds consist of two central, modern, solid tile beds each nine feet in length by five feet in width. The roses grown are American Beauties, Brides and Bridesmaid. This compartment has automatic double ventilation at the roof, no other ventilation being used. It has its own special machine.

The gardener does his work in a very systematic way. He has his books of reference always at hand and is more than a subscriber to florists' literature, because he reads it when he gets it, which is more than many florists do. His little batches of soil are graded to the different tastes of his various patients, his temperatures watched and studied, using self registering thermometers both for high and low. The blooms from individual plants are counted for comparison and guide in further purchasing, his daily cut is recorded, in fact one may see carried out in this miniature greenhouse a routine that might well recommend itself to many more pretentious commercial establishments.

In order to enable readers to judge as to what has been accomplished a list is appended of the cut from the rose house, equal success being accomplished in other branches:

CUT OF ROSES FROM 80 PLANTS, 1903 AND 1904.

	24 Brides.	24 Bridesmaids.	32 American Beauties.
October........	111	143	13
November	120	44	24
December.......	25	46	6
January	42	33	15
February	20	21	34
March	67	20	56
April....	79	48	137
May............	33	49	105
	497	404	390

TOTAL CUT FROM 80 PLANTS IN 3 YEARS

	1901 and 1902.	1902 and 1903.	1903 and 1904
Brides...	486	385	367
Bridesmaids....	410	373	404
Beauties	514	404	390
	1410	1162	1161

This cut of roses is from the 80 plants for 8 months only of each season.

In regard to mechanical ability to operate automatic ventilation and heat control, if the agents for the latter have had no more trouble than those who supplied the former they must think themselves lucky, the former having had only one call in three years. Now, however, the machines require and are undergoing cleaning and repairs.

Automatic ventilation where it can be successfully operated seems to be particularly well adapted to a private conservatory. It is well known how imperative it is in the culture of flowers, especially the more delicate varieties, to ensure an even and regular temperature. Most important of all is the avoidance of sudden changes which may be ruinous to success. The average gentleman's gardener has a multiplicity of matters to attend to outside the greenhouse, requiring at times his absence from the premises for long periods.

It must also be remembered that the larger the houses or the larger the cubic contents in block the easier it is to maintain an even temperature, so in a miniature greenhouse such as described, with its much larger proportion of outside wall surface as compared with the space heated, changes of temperature follow much more rapidly the changes in outside conditions, rendering more vigilance necessary than in the larger structure, where also at all times there are persons in attendance.

In equipping a private conservatory the cost of attendance necessary to constantly watch the ventilation has to be considered, if anything approaching such results as referred to are expected. If even at a small expense for automatic appliances they can be kept in successful operation it is a wise expenditure to install them in the first instance.

As designer and patentee of the automatic ventilator referred to, and notwithstanding that in some instances disappointment has resulted, the writer, considering the many favorable reports that have been received, together with an increase in the number of his patrons who are able to successfully operate them, is encouraged in his attempt to work further improvements.

Grass mulched orchards should seldom be pastured. The grass should be cut and allowed to lie on the ground.

PROPAGATION AND CARE OF ROSES

WM. HUNT, ONT. AGRI. COLLEGE, GUELPH.

GARDEN roses can be propagated by four different methods: by budding, grafting, layering, as well as from cuttings. The two last named methods are the best for the amateur to practice, not only because they give better results, but from the fact that budded and grafted roses are more apt to suffer from disease and winter killing than are our own root roses, the junction of the bud or scion and stock on budded or grafted roses being always more or less a dangerous point.

I am strongly in favor of our own root roses versus budded or grafted plants. I have grown hardy roses raised from cuttings for upwards of 20 years with splendid results, whilst during that period I have had to replace budded stock several times. Own root roses are slower in giving results than are budded roses, but when once established they will last for years without renewal, if hardy, suitable varieties are selected for the locality they are to grow in. Another point in favor of own root roses is that if they sucker out, the suckers instead of being useless—as well as hurtful—to the old plant can be used as young plants, as the suckers from an own root rose will produce a plant the same as the parent plant.

Many varieties of roses will increase themselves very rapidly from root suckers that can be detached from the parent plant early in the spring, and be planted out by themselves. But from budded or grafted plants, these suckers are only a nuisance and should be cut away as soon as they show themselves, being usually growth of the briar or manetti, both of them being useless from a decorative point of view, and are only used as stocks to bud or graft better varieties on.

The best time for an amateur to strike roses from cuttings is during July and August. A shallow open box three inches in depth of the required size, with holes bored in the bottom for drainage, and filled with fine sharp sand, is a good place to strike rose cuttings in. Sink the box level to the top in sand or soil in a partially shaded place out in the garden. Take the cuttings from wood of this year's growth, the wood should not be too soft or sappy, or

A Crimson Rambler Rose Bush and Its Owner.

The Crimson Rambler rose here shown was planted about seven years ago by Mr. D. McClew, president of the Deseronto Horticultural Society. It has had no protection from the wintry blasts. It was one year old when set out and showed some bloom the next year. The photograph was taken the fourth year, when it was a perfect mass of crimson during June, July and part of August, and at one time had over 7,000 roses. The following winter it was badly killed and Mr. McClew has come to the conclusion that in his section of the country protection is necessary. His experience with the Crimson Rambler is that it wants generous feeding, very little trimming, and that it does better with a northern or eastern exposure.

too old and hard. The base of the wood below where the roses have been growing is perhaps the best, although other growth will answer. The base of the cutting should be made just below a leaf joint, and should be cut quite level or square across the cutting.

It is not absolutely necessary to make the base of the cutting immediately below a leaf joint, but I have had the quickest and best results by taking the cutting in this way. A cutting with two leaf joints will be long enough. Remove the lower leaf before inserting the cutting in the sand. Use a very sharp knife in making rose cuttings, so as not to bruise or damage them. Insert the cutting about 1½ to 2 inches in the sand according to the length, making a hole in the sand with a pencil or stick before inserting the cutting. Water the sand well once, and keep the sand moist but not soddened afterwards. Pot off into small 2½ inch pots as soon as rooted, using a compost of three parts of loamy potting soil mixed with one part of fine sharp sand.

Layering: Climbing roses are more easily propagated from layers than bush roses. By taking a young cane early in spring of the preceeding year's growth and burying a portion two or three inches below the soil at a distance of a foot or two from the parent plant, a good plant can be obtained by the following spring, when it can be severed from the parent plant. About 12 inches in length of the cane should be buried, leaving about a foot or 18 inches of the top of the cane exposed. This terminal end or top of the cane will form the future rose tree.

If a straight cut is made two-thirds through the cane and just below a leaf joint, at a point where the cane is buried deepest in the ground, it will facilitate the layer in rooting. The same method can be used in layering bush roses, but the proper wood from these is not always obtainable. Select the canes for layering from those growing from near the root of the parent plant, as they are easier to layer than canes growing higher up the plant. Climbing roses can also be struck from cuttings as recommended for bush roses.

CULTURE AND PRUNING.

Roses like a deep, well drained clay loam soil well enriched with rotten stable manure. The drainage is an important point in wintering over the more tender varieties of roses. Bone meal forked in in the spring is a good fertilizer for roses. Half a pound of bone meal to each bush will not be too much when the bushes have become established.

Prune hardy bush roses early in the spring just as the leaf buds show the first sign of swelling. Prune all the strong growth back to within four to eight inches of the old growth, removing all dead and weakly shoots.

Climbing roses should have the weak shoots of the new growth removed, especially if the bush is strong and vigorous. Shorten the strong canes back so that they are left about four to six feet in length according to the space they have to grow in.

Green fly and thrip are the worst insect enemies of the rose. Use tobacco dust made from raw tobacco stems or leaves, or a solution of strong tobacco water to keep down these pests. Apply these remedies as soon as the leaves are developed, as they are of more service as preventatives than as cures, and an ounce of prevention is better than a pound of cure.

For the rose slug use dry hellebore powder sprinkled on the foliage when moist, or use it early in the morning when the dew is on. Weak Paris green water will answer as well, but I prefer the dry hellebore. These instructions only barely touch on some of the most important points in the propagation and culture of the rose, much has to be learned by experience, more especially in regard to suitability or different varieties, and treatment of same as required by local conditions and surroundings.

HYBRIDIZATION *

J. H. FAULL, PH. D., LECTURER IN BOTANY, TORONTO UNIVERSITY.

A PLANT hybrid is the product of a cross between two plants that do not belong to the same variety. It may be a cross between two varieties, between a variety and the parent species, between two species, or between two genera. It may resemble either of the parents, or it may resemble the male parent in some respects and the female in others, or it may be intermediate between the two, or it may resemble neither.

Can the nature of the cross be foretold? On what are the characters of the hybrid dependent? What will be the characters of its progeny and can they be determined beforehand? These are pertinent questions for the plant breeder.

Unfortunately our knowledge of the laws of hybridization is meagre. Not long since I read a short article in one of the Ontario trade journals in which a prominent florist advised crossing everything that could be got to cross, on the basis that some valuable results were likely to be attained. This was an unwitting testimony to the fact that that florist knew of no guiding principles—to him the production of a valuable race of plants by hybridizing was a matter of merest chance. The day has not yet dawned when we may select two plants of different kinds and predict the characters of their offspring, but we can do this with a few, and it is of these that I wish to speak. Species is a group of like plants that possesses some one or more characters that are not common to its ancestral species. A variety is a group of like plants in which some character of the species from which it was derived remains dormant, or in which there is the reappearance of an ancestral character that was dormant in the parent species. These definitions are due to the Dutch botanist, DeVries.

Practically the first contribution to our knowledge of the laws of hybridization was made by an Austrian priest, Gregor Johann Mendel. He studied the crosses between a species and its variety and succeeded in discovering the law governing hybrids of this kind.

The law, stated in brief, affirms that when a species and its variety are crossed the pairs of differentiating characters become dissociated in the hybrid, and re-arrange themselves in the offspring into as many combinations as is possible in ratios that are determinable by the theory of probability. There are no intermediate forms or new qualities produced.

In order to understand the workings of the law let us select a specific example, say a cross between a blue-flowered species and its white-flowered variety, all other characters in the plants crossed being the same. The results are not affected by the direction in which the cross is made. The only restriction placed on the experiment is that there must be no subsequent crossing, the progeny must be kept isolated from other plants with which they might hybridize.

All of the flowers of the first generation after the crosses are blue. Blue then is a dominant character. Indeed, the species character is almost uniformly dominant. In the second generation there is a splitting up: 25 of the offspring out of every 100 bear white flowers and 75 blue. The white flowers are of the pure variety type, and breed as true as if there had never been a cross; 25 of the 75 are likewise of pure type, of the species kind, and they breed true. The remaining 50 are hybrids, their flowers being all blue because this quality is a dominant. In this generation then one-half of the plants have reverted—an equal number to each parent type, and but one-half are hybrids. The latter break up in exactly the same manner in the succeeding generation, namely in

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* Extract from an add ess before the Natural History Section of the Canadian Institute.

the ratio of one white, two hybrids, one blue. This ratio is a constant for all cases that have so far been put to the test.

Mendel chose two pairs of differentiating characters for a second experiment. One made by DeVries may be cited by way of illustration. DeVries crossed a blue thorny form, Datura Tatula, with the white thornless Datura Stramonium Inermis. The members of the first generation were blue and thorny, so that these were evidently dominant characters. The second generation was broken up into the following classes: (1) 56.25 per cent, blue with thorns; (2) 18.75 per cent, blue without thorns; (3) 18.75 per cent, white with thorns; (4) 6.25 per cent, white without thorns. This is a proportion of 9:3:3:1. Out of the 56.25 per cent. constituting class 1, 6.25 per cent. bred true, and 55 per cent. were unstable hybrids. Of the 18.75 per cent. of class 2, 6.25 per cent. continued to breed blue and thornless plants, and the rest were unstable hybrids. In class 3, 6.25 per cent. bred true, and in class 4 all bred true. It will be seen that two groups reverted to the original types, two new types appeared, and the rest were hybrids, the offspring of which again split in a definite manner.

With a greater number of pairs of differentiating characters the difficulties of the experiment increase and the statistics become much more complicated, though the law applies to these complex cases just as it does to the simpler.

The explanation of this law is embodied in the hypothesis of germinal purity, that is that every germ is pure with regard to any particular character. Thus the hybrid between the blue flowered and the white flowered types of the first example is supposed to produce two kinds of pollen grains and two kinds of eggs, namely, those that are of the blue-flowered type and thise that are of the white. These may be illustrated thus: Pollen (B), Egg (B); Pollen (W), Egg (W).

It will be seen at once that Pollen (B) may fertilize Egg (B) or Egg (W), giving rise to the pure blue-flowered strain in the one instance and the hybrid in the other. Likewise Pollen (W) may fertilize Egg (W) or Egg (B), giving rise to the white-flowered variety or to the hybrid. Thus in a large number of fertilizations the proportions of the blue-flowered offspring to the hybrid and to the white-flowered variety will be 1:2:1.

In the hybrids formed from the blue-flowered thorny Datura and the white-flowered smooth variety (a cross involving two differentiating characters), there is a larger number of possible combinations. The distinctive characters of pollen grains and egg cells borne by them may be represented thus: Pollen (B and T), Egg (B and T); Pollen (B and S), Egg (B and S); Pollen (W and T), Egg (W and T); Pollen (W and S), Egg (W and S).

It will be seen that several classes may arise and that two new types will occur in the offspring, namely, a blue and smooth Datura, and a white and thorny Datura, and that the number in every class can be calculated by an application of the theory of probability, since the fertilization takes place with equal likelihood in all directions. The characters of the progeny can be foretold with equal certainty.

From a practical point of view the discovery of this law has not been directly of as great value to the plant breeder as was at first predicted. Obviously this is not surprising when it is considered that the law is of limited application, that a large proportion of the hybrids revert, that the numbers of any new type produced are comparatively small, that the difficulties of preventing subsequent crosses are very great, that the number of differentiating qualities between desirable crosses is usually large and so entails a most cumbersome experiment, that no new characters can be produced by crosses of this kind, and that no undesirable qualities can be eliminated.

Nevertheless, it indicates what crosses to avoid. It also shows the danger of growing a species and its variety in close proximity if they hybridize easily. Thus if a blue and a white flowered variety are growing side by side impurities are sure to occur in the seeds of both. Of course the white variety can be purified readily, for on sowing the seeds the hybrids will reveal their presence in the crop by their blue flowers; but it is different with the species, for the blue flowers of the hybrids will pass undetected among the blue flowers of the species.

From a theoretical standpoint the discovery was of tremendous importance. It was a beginning of the unravelling of the difficult problems of hybridization. It showed how new types may arise in undisturbed nature. It opened up a line of experimental work on heredity and evolution, the first valuable experimental contribution to these subjects since the time of Darwin. It indicated methods of research which if prosecuted promised a flood of light on the process of evolution.

Research on hybridizing has become active in recent years. Every earnest experimenter can help towards their solution if he employs careful methods. But it must be pointed out that if the methods are to be of any value they must be statistical and kept with great care.

HOW TO MAKE CITY GROUNDS ATTRACTIVE*

MAYOR J. A. ELLIS, OTTAWA, ONT.

BESIDES trees and climbers, shrubs are a very important feature of landscape gardening. Unfortunately we in Ottawa are a trifle too far north for many shrubs which thrive and grow most luxuriantly a little farther south. Still, we have quite a sufficient list to choose from. The best shrubs for the Ottawa district are Hydrangea Paniculata Grandiflora, Philadelphus Coronarius (Mock Orange or Syringa), Viburnum Opulus Sterilis (Snowball), several spiraeas, of which Van Houttei is as

A Mass of Bloom Hiding a Fence in a City Garden

A portion of the garden of Mr. J. E. Northwood, one of the winners in the Lady Minto garden competition, held in Ottawa for several years, is here shown. The flowers to be seen are a collection of some of the easiest grown and freest flowering plants; such as petunias, gladiolus, coreopsis, some of the better class of perennial phlox, and others, all of easy culture and effective colorings.

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*Continued from the May Issue.

good as any, Lonicera Tartarica (Bush Honeysuckle), lilacs, of which there are now many new and improved ones, especially in the doubles, and roses in bush form. There are, of course, many other shrubs which will do well in Ottawa, but the above list is complete enough for a small garden.

The next important feaure for a private garden is perennials. Of these we have a great list which do first-rate in the Ottawa district. During the last few years horticulturists have adopted much time to the improvement of perennials, and the result has been that we have a magnificent range to choose from. Blooms are larger and many new and beautiful colors and shades have been developed in some of the best known perennials. I would not advise everyone to try to grow all the really good and desirable perennials there are. The list is altogether too great. No one can go wrong, however, if he grows the following: Perennial phlox, paeonies, irisis, delphiniums, sweet Williams, aquilegia (of which the long spurred varieties are fine), Iceland poppies, Gypsophila Paniculata, Gaillardia Grandiflora, Helianthus Multiflorus (and some other varieties of perennial sunflowers), many varieties of lilies, of which Speciosum are the hardiest and best for this district, and the now somewhat common Rudbeckia—Golden Glow.

In the above list of shrubs, flowers and perennials I have given those which are the best, in my opinion, to grow in this locality. They are hardy and will live through our winters and flourish. I could have added many which are desirable, but which require a little less severe winter than ours. Having got the trees, shrubs, climbers and perennials, we can, if we have any space in our grounds left and something is still desired to complete our picture, fill in with annuals. I have tried to describe grounds tastefully planted and whose plants, etc., would be permanent and consequently require no replanting, but only a little care and attention each year. Without annuals at all we can make a most beautiful garden, as the shrubs and perennials above mentioned will give a variety of flowers during the whole season.

ANNUALS.

There are a great number of annuals, some good, some indifferent, and some almost worthless. I am only going to mention those which would fit in well in grounds surrounding a city residence, and already planted with trees, shrubs, climbers and perennials. Sweet peas, nasturtiums and gladioli are probably the best for such a purpose. The latter can be planted in clumps of five or six wherever thought desirable amongst the perennials and shrubs. The nasturtiums and sweet peas can be grown as a background against a trellis, or the latter, as Mr. R. B. Whyte, of Ottawa, grows them, around wire netting arranged in the form of a small circle. When the sweet peas are in flower the wire netting can hardly be seen, and they make a pillar of foliage and bloom. Other good annuals are poppies, asters, Phlox Drummondii, zinnias, salpiglossis, dianthus, pansies and scabiosa. Of bulbs, in addition to lillies, we can hardly do without narcissus and tulips, although the latter require to be renewed every third year or so, as they are apt to run out.

In arranging all or any of the above mentioned the trees and shrubs should go on the sides of the picture or along the boundaries of our grounds. The corners of the grounds should be curved off with shrubs or flowering plants. There should be no sharp straight lines in the planting of shrubs and perennials, but they should be so arranged that they will round off the angles and make easy graceful curves. In front of the shrubs should come the perennials and whatever annuals we use. In arranging these shrubs, perennials and annuals due regard must be had to their height and season of blooming. They must be arranged so that they will grade, as mentioned above, gradually from the back and sides of the garden to the front, so that there will always be something in bloom in every part of the garden.

HAVE SOME COLOR.

Try and avoid too much greenness. Many gardens are spoiled by this, which would be vastly improved by a little dash of color here and there. I would not advocate planting flowers of the same species in different parts of the garden, as a rule, although there are cases (as in that of gladiolii) where this can be done to advantage. The general and best rule is to keep the flowering plants of the same species together so as to make a mass of them.

There are many lovely and beautiful gardens in Ottawa. The Lady Minto garden competition has done much to encourage people to improve their grounds, more than that it has given other people who were not in the competition object lessons from which to lay out their own grounds. It is a fact to be noted that when in a locality even one man starts to improve his grounds and beautify them, it is not long before his neighbors begin to follow his example, with the result that there is a general improvement in the locality. The gardens and grounds of Ottawa are of many and varied styles, each with its own peculiar beauty. This is as it should be, as each garden must be laid out in that way which best suits its surroundings and locality.

PANSIES IN THE GARDEN*

E. F. COLLINS, TORONTO, ONT.

PANSIES are easily raised from seed. The seed can be sown at any time, but the usual way is to sow it in July and August to have plants to flower the next spring, or in March or April, which will produce nice plants to flower during the summer and fall months.

If sown in the spring the seed should be sown in a pot or pan, in a light soil, or gentle hotbed, and kept moist. As the wellbeing of the plants depends on their being well rooted it is necessary to prick off the seedlings as soon as they are large enough to handle into other boxes filled with a rich light soil, about three or four inches in depth, placing the plants about three inches apart each way. This space will give them room to grow and also allow a nice sized ball of roots to be lifted, with the soil adhering, to plant out in the garden.

The soil should be of a free, rich and gritty nature, and deeply cultivated, as the pansy makes lots of roots of a fibrous nature and likes to penetrate a considerable distance in search of food. Grit is essential to the well being of the pansy. Road sand, gravel siftings with sandy loam, and lots of well decayed manure and leaf soil, are all favorable to the plants. When planting out to flower it should be done firmly and deep, as the plants are continually being renewed by means of the fresh growths which spring up from their base.

It is a good plan to top dress the roots once or twice during the season. This can easily be done by taking some light soil and shaking it close around the stems of the plants to a depth of about two inches, which treatment has a wonderfully sustaining and fertilizing effect on the pansy.

SOWING THE SEED.

If you wish to have plants for flowering in the early spring sow your seed about the early part of August. Do not think that by sowing earlier you will have more flowers the next spring, because, although you will get larger plants before winter sets in, you will find a lot of them liable to die if the winter should happen to be a severe one. It is the medium sized, well rooted, stocky plants that come through the winter the best.

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* Extract from an address delivered at the May meeting of the Toronto Horticultural Society.

Sow your seed rather thin, outside in the garden, in a small plot of well pulverized ground, and protect it from the sun and heavy rains. After the seedlings are large enough to handle make a frame by nailing four pieces of boards together and place it in the plot of ground you have prepared for them. Dig the ground deep and then rake it down to a fine surface and prick out all your seedling pansies into this frame. Each plant should be about four inches apart each way. Begin with the largest plants and work down to the small ones. By doing this you keep your plants the same distance apart and avoid having a strong, robust one overshadowing a tiny one here and there all over the bed.

Keep your plants shaded a few days after being pricked out and well sprinkled with water every day. After that they may be exposed to the sun and air. If the weather is dry they must be watered, but not too much, as this is the time when you want to build up a short, sturdy plant to resist the winter. Too much water makes the plants grow sappy and produces heavy foliage and such plants are sure to die first.

Chrysanthemums in June

GEORGE HOLLIS, BRACONDALE, ONT.

JUNE, like May, is a busy month for the chrysanthemum grower. The main crop, that is all the late varieties, should be planted this month. If you cannot spare the house for a week or two, and your plants are ready to plant, give them a size larger pot at once, for if they become hard and are stunted in any way your chances of getting first-class flowers are gone.

Keep the ventilators open night and day on your late stock and also on the early varieties you planted in May. Give the plants a light spraying every morning and be careful not to keep them over wet, which would cause a soft growth. Plant each variety separate in blocks across the bench. Single stems can be put five inches apart in a row and seven inches between the rows.

Your pot plants would be better were they plunged outside for two months. Keep the strongest growths pinched back during June and do not over water them nor put them in pots that are too large. A fair sized plant can be grown in a seven inch pot, and a large one in a nine inch pot. They will not need any manure water.

A good soil for the benches and pots is four barrows of earth (two bushels to a barrow) and one barrow of well rotted manure (cow manure preferred), with a four inch pot of bone meal to each barrow load. Four to five inches of earth in a bench is sufficient to grow high class blooms.

An Ugly Board Fence Made Beautiful

Readers of The Horticulturist who have bare board fences in their gardens can readily make them beautiful in the same manner Mr. Thomas Paradine, of Hamilton, did last season with his as shown in the illustration. The flowers along the right hand side of the walk are nasturtiums, asters, dahlias and pansies. There are other flowers in other parts of the garden which cannot be seen in the photo. The whole has to be seen before one can fully realize what can be accomplished with a trifling expense. The fence on the right hand is over six feet high and is covered from view by the nasturtiums and was very pretty at the time the photograph was taken last August.

GROWING TOMATOES NEAR HAMILTON

"I HAVE 48 acres under cultivation at my house and 25 acres in another place," said Mr. E. J. Mahony, president of the Hamilton District Tomato Growers' Association, to a representative of The Canadian Horticulturist who visited his place during May. "About 30 acres of this is in the vegetable garden. All kinds of vegetables are grown.

"Market gardeners about Hamilton have grown tomatoes extensively in past years for the canners. The latter have been paying 25 cents a bushel, but this year the members of the Tomato Growers' Association refused to make contracts at less than 30 cents. This the canners have refused to give, and by present appearances there will be few tomatoes grown. No contracts have been made, so far as I know, by any of the members of the association at last season's rates. The canners are dealing with new people and endeavoring to get them to grow tomatoes. Without contracts they cannot depend on a supply, and I do not believe they have succeeded in getting many to contract. We will be able to sell what tomatoes we raise in baskets and to obtain reasonable prices.

"The growers raise their own tomato plants. For the earliest the seed is sown about March 1, and for the general crop about March 20. They are started in frames. We grow our own seed. I have been offered as high as $8.50 per 1,000 for tomato plants in the canners' interest.

"The Late Ignotum has been the best variety I have grown. The last two years they appear to have run out. The Stone is the next best. It is a week later, but by saving the seed from the earliest fruit it can be made earlier. The Earliana is the best early variety. It is of good quality and smooth. Canners are glad to get it.

"Tomato seed was sown as usual this season by the members of the Tomato Growers' Association, but about a month ago a circular was sent out instructing them not to transplant, as there was no indication of the canners coming to terms. The latter are a strong body, and the combination will try every means to force the growers, but the latter have a fair prospect of gaining their point."

With reference to canned goods Mr. Mahony stated that negotiations are in progress for establishing a factory in Hamilton where vegetables and fruit will be put up in glass instead of tins, like the English goods. There is a demand among people who want the best, for English goods put up in glass, and they are willing to pay a little more for them. There is no reason, he believes, why these goods should not be put up in Canada. Tin cans are objectionable, especially for fruit.

Mr. E. J. Mahony,

President of the Hamilton Tomato Growers' Association.

"Though I am turning my attention to

fruit to some extent," said Mr. Mahony, "because the strip of country under the mountain where I live is well adapted for it. I am satisfied there is a bright prospect for vegetable growers and that they are going to make money out of their business."

SOME EXPERIMENTS WITH TOMATOES

DURING each season comparative trials have been made at the Vermont Agricultural Experiment Station to determine the relative productiveness of different varieties of tomatoes grown under identical conditions. The first season's work included 78 plants of Sutton's Best of All and 74 of New Stone. During 1903-04 48 plants of each of these two varieties were grown. In addition to these, 11 plants of Lorillard and eight of Sutton's Best of All were grown on the side bench for comparison. Taken as a whole the trial, the results of which have just been made known, indicates little difference in productiveness between Sutton's Best of All and New Stone, with the advantage slightly in favor of the latter. In the case of Lorillard and Sutton's Best of All the results of one season's trial are decidedly in favor of the former.

As to earliness the average number and weight of large and small ripe fruit produced by the Sutton and New Stone plants during the first year did not vary materially. A comparison by months shows that in March, during the latter portion of which some ripe fruit was picked, Sutton's Best of All gave the better yields of both large and small fruits. The increase in large fruits was small, about three per cent., while that in the total product was 7 per cent. During April the yield of large fruits from New Stone exceeded that of Sutton's Best of All by 15 per cent., and in total yield by nearly 13 per cent.

In one season's trial Lorillard proved superior in every respect to Sutton's Best of All. Lorillard is apparently the earliest and most prolific for forcing purposes of the three varieties tested.

A MARKET GARDENER'S EXPERIENCE

"I HAVE seven acres under market garden and orchard," said Mr. G. Nicholson, of Toronto, to a representative of The Canadian Horticulturist. "I raise all kinds of vegetables and dispose of most of my product to peddlers.

"Vegetables are grown in the orchard. Where the trees are close spinach does well. I had 4,000 cauliflower last year, which did well and headed up finely. I make them white by tying up. My tomatoes rotted badly. A considerable quantity of early potatoes are raised, for which I obtain as high as $1.70 a bushel. They are started in hotbeds and transplanted when the sprouts are about two inches high. Last year I lost a portion of the crop by the potato bug. A neighbor lost five acres. Paris green kills the tender plants.

"Club root did considerable damage to my cabbages. When the head has formed, and before it gets hard club root forms and the plant dies. I have not found a remedy. Salt or lime is said to be good, but I have not tried them.

"In the orchard apples, pears and cherries are grown. There are very few early apples, mine being principally winter varieties. Spys are not worth growing. They command a good price, but the trees are small producers. Greenings are the most satisfactory. I do not spray, as I find cultivation gives as satisfactory results. Some people complain of worms in their cherries, but they have never injured mine."

THE WHITE FLY AND THE REMEDY

THE white fly has proved one of the most serious insect pests encountered in the winter forcing of tomatoes, says Mr. Wm. Stuart, of the Vermont Agricultural Experiment Station, in his annual report, which has just reached The Horticulturist. This fly does not succumb to the ordinary remedies such as are employed against red spider, aphis and thrips. This immunity to the ordinary fumigants such as tobacco stems or dust, aphis punk, nicoticide, and sulphur fumes, or to the liquid insecticides applied as a spray, is largely due to the fact that during its immature stages of existence it is less easily destroyed than are the other pests mentioned. The experimental crop was started rather late in the season of 1902-03, and hence fewer insects appeared on the young plants than occurred the next year and they were more easily managed.

Frequent fumigation with nicoticide did not rid the plants of the fly during 1902-03, but kept it from great increase or from actually doing serious injury. In 1903-04, however, the plants being started earlier and the insects seemingly more prevalent, fumigations with nicoticide seemed to be of slight avail. Trials were made of aphis punk with meagre results. Fir tree oil, lemon oil, X-all and soap solutions were next tried, at strengths in some cases considerably in excess of those recommended, but with little avail, as the insects seemed to increase rather than decrease. It was decided as a last resort to try hydrocyanic acid gas fumigation. The dose employed was at the rate of 0.2 grains of 98 per cent. potassium cyanide to each cubic foot of air space, or at the rate of about two-thirds of an ounce to each 1,000 cubic feet. Fumigation with the dose mentioned destroyed both the nymph and adult forms of the insect and did no injury to the bearing plants. In all cases the room was fumigated in the evening and remained closed until the following morning. This remedy must be handled with creat care.

In fumigating a second crop of plants just beginning to blossom and set fruit, it was thought best because of the tenderness of the plants to use a weaker dose, the amount being cut down to about .014 grams potassium cyanide per cubic foot, or 50 grams to the room. Notwithstanding this very material decrease in amount of cyanide used, considerable injury was done, for the most part confined to the tender growing shoots and blossoms. This outcome seems in part due to the higher temperature of the house during the fumigation, it having stood at 70 degrees F. instead of 60-65 degrees as at the first treatment. This tendency to injury in high temperature fumigations is corroborative of observations made by others. Subsequent trials with the same strength at lower temperatures did no injury to the plants, yet destroyed the insects.

Cucumbers, lettuce and a mixed lot of plants have been fumigated in the same manner as just outlined with equal satisfaction. Fumigation with light doses, half ounce per 1,000 cubic feet of air space, at temperatures not over 60-65 degrees F. and long exposures is effective, and, in the hands of the ordinary person, is perhaps on the whole more satisfactory than strong doses and short exposures as a remedy against the white fly.

Peas which have been eaten by the weevil may grow, as the insect does not always injure the germ. The plant, however, will be less thrifty, because it should get a good start from the seed, which it cannot get from a half eaten seed. Better feed such peas to the chickens and sow perfect seed.

Damping off of hot-bed melons is caused by closing the hot-bed too soon after watering, especially on warm days. The cells at the surface of the ground become injured and a fungous disease called damping off is induced. Admit fresh air and apply air slacked lime.

THE CULTURE OF POTATOES*

W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA, ONT.

One may keep potatoes growing thriftily through a time of drought by thorough cultivation and yet neglect looking after the tops and preventing them from being destroyed by the potato beetle and by the blight and rot. Prof. Zavitz, in an experiment at Guelph, showed that in an average of two years potatoes which were allowed to be eaten by bugs only yielded 60.69 bushels per acre, while those sprayed with paris green yielded 138.20, an increase of 77.50 bushels per acre, and just in proportion to the amount of top destroyed so much will the crop be lessened. Instead of waiting until the vines begin to show very plainly the work of the young beetles the vines should be sprayed just when they are hatching, as it takes a day or two usually before the Paris green takes full effect and the vines by that time are pretty badly eaten.

Not only should we spray to kill the potato beetle, but also to prevent the blight which causes such great loss every year. If growers would only spray their potatoes with Bordeaux mixture their crops would be very much increased. In an experiment during 1904 with 15 varieties it was found that the average yield per acre of the 15 kinds where sprayed with Bordeaux mixture and Paris green was 369 bushels 21 pounds per acre, and the same varieties unsprayed 306 bushels 39 pounds per acre, or a difference in favor of spraying of 62 bushels 42 pounds per acre. Taking an average of three years, the increase has been 94 bushels 30 pounds per acre, which at 40 cents a bushel means $39.80 per acre, the cost being about $9 per acre at the outset for large areas, or a net gain of $30.80.

A combination of Bordeaux mixture and Bug Death gave an increase over ordinary Bordeaux mixture and Paris green of 29 bushels 42 pounds per acre, but the cost of this was nearly twice as much as the former. There was still, however, a net difference in favor of Bug Death and Bordeaux mixture applied together of $3.08 per acre, estimating the price of potatoes at 40 cents a bushel. Bug Death applied alone in 1904 gave an increase of only one bushel 13 pounds per acre, taking an average of 15 varieties, although with some varieties there was a much greater difference, but on the other hand with others there was about as great a difference in favor of Paris green. It is only by averaging that we can get at fair estimates of what the results would be in field culture.

AN EXCELLENT MIXTURE.

The best mixture of those which have been tried for several years to prevent blight and rot and to kill the potato beetle is the poisoned Bordeaux mixture, the formula found best by me being: Sulphate of copper, 6 pounds; lime, 4 pounds; Paris green, 8 ounces; water, 40 gallons.

Although the blight does not usually appear until after the middle of July I prefer using the Bordeaux mixture at the time when the first spraying is made to destroy the young beetles and keeping the vines covered with the mixture from then until September. In 1904 it took five sprayings to do this. If the vines are not kept covered it may happen that the blight will come unexpectedly when spraying is needed. Hence the work should be done thoroughly or not at all.

The first spraying we give is not considered necessary for the prevention of the late blight, but it does, we believe, protect the foliage from other enemies. Five sprayings should not cost more than $9 per acre for time and materials if one has a good spray pump. The Bordeaux-Bug Death mixture which was tried this year for the first time gave better results than Bordeaux mixture and Paris green, but several seasons' tests are necessary in order to show whether it will average better than the Bordeaux mixture and Paris green.

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*Continued from the May issue.

The Canadian Horticulturist

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The Only Horticultural Magazine in the Dominion.

Official Organ of British Columbia, Ontario, Quebec and Prince Edward Island Fruit Growers' Associations and of the Ontario Vegetable Growers' Association.

H. Bronson Cowan, Editor and Business Manager.
J. A. Hand, Associate Editor.
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NOTICE TO ONTARIO SUBSCRIBERS.

Owing to the transfer of The Canadian Horticulturist, formerly published by the Ontario Fruit Growers' Association, to an independent company known as The Horticultural Publishing Company, Limited, the fee of one dollar if sent to The Canadian Horticulturist or to Mr. H. B. Cowan will not include membership in the Fruit Growers' Association as in past years. As many of those subscribing in this way consider the membership in the association, together with the annual report, as of considerable value, it would be an injustice to cut them off summarily. However, as the transfer dates back to December, 1904, those who desire the copy of the annual report and other privileges of membership this year in the association will require to drop a card at once to the secretary, P. W. Hodgetts, Parliament Buildings, Toronto. Next year be sure to join your Provincial Fruit Growers' Association and get The Canadian Horticulturist as one of the premiums.

P. W. HODGETTS,
Sec'y Ont. Fruit Growers' Ass'n.

WHAT HAS HAPPENED TO MORGAN?

It would be difficult to determine which has fallen the flattest, the seedless apple boom or the horticultural reputation of Mr. Sampson Morgan, of Broadstairs, England. Following the publication of Prof. Craig's letter in The Horticulturist for April, ridiculing the extravagant claims made in the March issue by Mr. Morgan for the seedless apple, Mr. Morgan was written to and his attention drawn to Prof. Craig's letter and he was invited to reply thereto.

Since then The Horticulturist has waited patiently for the reply which has not come. Lately, something worse than the publication of Prof. Craig's letter has happened. It has been discovered that the two so-called coreless apples which Mr. Morgan sent to Covent Garden Market, and which created so much excitement among the buyers who frequent that historic spot, and which were finally auctioned off for about seven dollars apiece, really possessed healthy seeds and cores larger and harder than those of most apples of their size. When, after the excitement connected with the introduction of these apples had subsided, and they were cut open, the discovery of the cores and seeds created an explosion of ridicule and fun in regard to Mr. Morgan and seedless apples generally, the echoes of which are still to be heard among the papers of Great Britain. The question now being asked is, how many seeds did the apple sent the King contain? No person, however, has been found who has dared to put this question direct.

When Mr. Morgan was beseiged by the British press for an explanation he wired that the fruit cut were not the Spencer seedless apples, to which Mr. Shearn, their buyer, retorted that if they were not the Spencer seedless apples they were apples he paid 30 shillings apiece for. The Horticulturist has come to the conclusion that the reason it has not heard from Mr. Morgan must be that he has either innocently swallowed the seeds of one of his famous apples or that he is on the war path for the Spencer Coreless Apple Company which led him from the paths of veracity into troubles he had dreamed not of.

BRITISH COLUMBIA FALLS IN LINE.

The Canadian Horticulturist has recently been appointed the official organ of the British Columbia Fruit Growers' Association. This means that The Horticulturist is this year the official organ of four provincial fruit growers' associations extending from Prince Edward Island on the east to British Columbia on the west.

This is as it should be. There are many questions connected with the fruit industry in Canada which are of as great interest to the fruit growers in one province as to those in another. There is only one paper in the Dominion which represents the fruit interests. That paper is The Canadian Horticulturist. This means that if the fruit growers in all the provinces desire to keep in touch with one another and to discuss matters and to advocate reforms which are to their mutual benefit they can best

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The Canadian Horticulturist

do so through their common organ, The Horticulturist. The appointment of The Horticulturist as the official organ of the British Columbia Fruit Growers' Association means that the paper now practically represents the fruit interests of the Dominion and that when it speaks for these interests it does so with the voice of one having authority. This union of forces on the part of Canadian fruit growers will result to their advantage.

Why do some fruit growers succeed in obtaining four and five times as much for their fruit as others? Thousands of Canadian apple growers were unable to obtain over 60 cents a barrel for their 1904 crop of apples. Recently The Horticulturist received a letter from Mr. Eben James reporting a sale of apples made in April by his principals, Messrs. Woodall & Co., of Liverpool, Eng. This sale included 131 barrels of apples sold for Mr. W. H. Dempsey, of Trenton, Ont., which netted a gross average of $5.94 a barrel, or a net value to Mr. Dempsey of $4.50. The article by Mr. Dempsey on "Apple Growing for Profit," which appears in this issue, shows some of the methods Mr. Dempsey has adopted and which have enabled him to make such sales as the one here mentioned.

While the resignations of Prof. Lochhead and Prof. Harrison from the staff of the Guelph Agricultural College will be a loss to that institution it is fortunate that instead of leaving Canada, as so many of our best men have done, they have accepted positions with the Macdonald Teachers' College and College of Agriculture at St. Annes, Que., where Canadians will still reap the benefit of their services. Prof. Lochhead will sever his connection with the Guelph college on July 1 and will probably make special studies, along certain lines of plant diseases and insect life, for three or four months in the laboratories of the Department of Agriculture at Washington, and otherwise prepare himself for his new duties before the new college opens in about a year and a half from now.

The British Columbia Fruit Growers' Association is to be congratulated on the excellent work it is doing as shown by the article in this issue by Mr. Brandrith, the secretary. The holding of a number of meetings at different points in the province each year is an excellent one. The efforts being put forth to ensure for fruit growers the benefits of cooperative effort are in the right direction and will result in benefit to the industry.

Fruit growers join in expressing their sympathy with Mr. Harold Jones, of Maitland, Ont., the well known fruit experimenter and farmers' institute speaker, who is also a director of the Ontario Fruit Growers' Association, in the recent death of his father, at the old homestead at Maitland. Those who knew Mr. Jones, sen., realize what a blow his death means to his son and family.

THE PROVINCIAL HORTICULTURAL EXHIBITION

The second Provincial Fruit, Flower and Honey Show, with the addition this year of an exhibit of vegetables, will be held from November 14 to 18 in Massey Hall, Toronto. Even at this early date indications are that it will prove a great success. The fact that Massey Hall has been secured will add greatly to the interest taken in the exhibition.

A meeting of those interested in the show was held in the secretary's office in the Parliament Buildings early in May. Those present included Messrs. W. H. Bunting, St. Catharines; P. W. Hodgetts and Alex. McNeill, representing the Ontario Fruit Growers' Association; W. A. Emory and Joseph Rush, representing the Ontario Vegetable Growers' Association; W. Couse, representing the Ontario Bee Keepers' Association; Geo. Douglas, W. Jay and T. Manton, representing the Toronto Gardeners' and Florists' Association; H. R. Frankland, W. G. Rook and H. Simmers, representing the Toronto Horticultural Society; R. J. Score, B. Sanders and J. H. Dunlop, representing the Toronto Electoral District Agricultural Society, and H. B. Cowan, representing the Ontario Department of Agriculture.

It was explained by Mr. Cowan that since the show held last fall in Toronto a deputation had waited on the Minister of Agriculture and urged that the show should be held in Hamilton. A second deputation had waited on the Minister and urged that the show should be continued in Toronto. Mr. Cowan stated that he had received a letter from the Deputy Minister of Agriculture notifying him that the Minister of Agriculture had decided to continue the show in Toronto and to give a grant of $1,000 for that purpose and that he desired Mr. Cowan to call together those interested in the holding of the show and to make the necessary arrangements for it.

Mr. Cowan explained that the intention of the Department, when it inaugurated the holding of this show a year ago, was to encourage a Fruit and Honey show. At the suggestion of the florists it had been decided to hold a joint show last year, the Government assisting only the honey and fruit interests financially. Mr. Cowan stated that he had consulted the Minister of Agriculture, who had intimated his desire that the grant this year should be distributed in the same manner except that a portion of the money would have to be given to the recently formed Ontario Vegetable Growers' Association, which he desired should have a part in the show.

Several of those present expressed the view that the government grant should be distributed to the show as a whole, claiming that the floral sections are as much deserving of assistance as the fruit, honey or vegetables.

Mr. Cowan stated that if the representatives of the fruit honey and vegetable interests were willing to pool their share of the grant the Department would offer no objection. After some discussion it was agreed to do this.

In a discussion of the prize lists Mr. Hodgetts stated that the prize list for the fruit section this year should be $800. Mr. Dunlop stated that the prize list for the floral section last year was about $1,200, and that this amount would not need to be increased much, if any, this year. Mr. Couse said the bee keepers offered $200 in prizes last year. Mr. Emory and Mr. Rush believed the prize list for the vegetable growers would be about $200. It was decided to estimate the prize lists at $2,700, rent of Massey Hall, $650; carpentering, $250; advertising and printing, $500; labor, $200; incidentals, $200, making a total estimated expenditure of $4,750. The estimated receipts were placed at: Government grant, available, $800; City Council, $200; Electoral District Agricultural Society, $150; Florists' and Gardeners' Association, $125; public subscriptions, $1,000; Vegetable Growers' Association, $100; Bee Keepers' Association, $50; Fruit Growers' Association, $200; total, $2,625, leaving about $2,125 to be raised by gate receipts.

OFFICERS ELECTED.

The election of officers resulted as follows:

President, R. J. Score, Toronto.

1st Vice-President, W. H. Bunting, St. Catharines.

2nd Vice-President, John Chambers, Toronto.

Secretary, H. B. Cowan, Toronto.

Treasurer, J. H. Dunlop, Toronto.

It was decided on motion of Mr. Rook that the chairmen of all committees connected with the show must be members of the executive committee.

The following chairmen and secretaries of committees were appointed:

Honey—Chairman, Mr. Sibbald; Secretary, Mr. Couse.

Vegetable—Chairman, Mr. Rush.

Floral—Chairman, Mr. Manton; Secretary, Mr. Collins.

Fruit—Chairman, Mr. McNeill; Secretary, Mr. Hodgetts.

Finance—Chairman, Mr. Frankland; Secretary, Mr. Dunlop.

Printing—Chairman, Mr. Rook; Secretary, Mr. Simmers.

On motion of Mr. Manton, seconded by Mr. Dunlop, it was decided that at meetings of the executive committee the representatives present from any organizations interested in the show should have the right to vote for their absentees.

The executive committee will be composed of four representatives from the Ontario Fruit Growers' Association, four from the Ontario Vegetable Growers' Association, and four from the Ontario Bee Keepers' Association, making twelve representatives from these three sections, and four representatives from the Toronto Horticultural Society, four from the Toronto Gardeners' and Florists' Association, and four from the Toronto Agricultural Society, making twelve representatives from the floral section, with Mr. Cowan representing the Department of Agriculture.

A deputation representing the Niagara Fruit Growers' Association waited on the Ontario Department of Agriculture recently and asked for an annual government grant.

Items of Interest

Mr. W. T. Macoun, horticulturist, Central Experimental Farm, Ottawa, sails June 14 for the old country and will be absent two months. While away Mr. Macoun hopes to visit many places in Great Britain and Ireland where experimental and commercial work in horticulture is being carried on. The trip is primarily a holiday, but Mr. Macoun hopes to get much information which will be useful in his work.

Mr. A. E. Sherrington, of Walkerton, attended special fruit meetings arranged for through the Department of Agriculture at Simcoe May 10 and at Burford May 11. The attendance at the Simcoe meeting was fairly large and representative. A strong committee was appointed to take up the work of organization in order that the fruit of the district may be handled on the co-operative plan during the coming season. The meeting at Burford was not largely attended, but those present were most enthusiastic, and an association will be formed at once to handle the apples of the district.

Meetings to discuss matters relating to the fruit industry were held during the latter part of May at Salmon Arm, Enderby, Vernon, Kelowna, Peachland, Summerland, Penticton and Keremeous, B. C. These meetings were addressed by the president of the British Columbia Fruit Growers' Association, Mr. T. W. Stirling, on "Varieties to Plant;" Mr. W. J. Brandrith, the secretary, spoke on "The Planting, Care and Cultivation of the Orchard;" Mr. R. M. Palmer, on "Marketing and Transportation," and Mr. Maxwell Smith, Dominion inspector under the Fruit Marks Act, on "Co-operation in the Fruit Industry" and "The Fruit Marks Act."

The Picton Horticultural Society has distributed neat circulars stating the plants and seeds, etc., being given to members this spring, as follows: Half pound hybrid sweet pea seed, one exhibition double begonia, one single fringe begonia, three pearl tuberoses and three named gloxinias. On the sheet is a detailed description of the premiums given, with cultural hints and directions for their favorable growth.—(W. T. Ross, secretary.

The Late R. W. Lloyd.

The cause of horticulture in Ontario, and particularly in Deseronto and vicinity, has suffered a severe loss in the recent death of Mr. R. W. Lloyd, the energetic and enthusiastic secretary-treasurer of the Deseronto Horticultural Society, whose portrait is here presented. Mr. Lloyd was a native of England, but had lived in this country for 21 years. For eight years he held an appointment under the British Government in India, having to do with the cultivation of cotton. He lived in Deseronto for eighteen years and was always held in the highest respect for his sterling qualities. He always took a lively interest in the welfare and progress of the town and was among the first to join the Horticultural Society after its organization. For some years past he had filled the office of secretary-treasurer with advantage to the society; and his knowledge of plant life and cultivation, which was of a high order, was at the disposal of all enquirers. The society and the town are distinct losers by his death.

The Toronto Society

The last meeting of the Toronto Horticultural Society was one of the best attended meetings held for a long time, many ladies taking an active interest in the meeting. Mr. E. F. Collins prepared a paper on the culture of pansies, but being unable to attend, Mr. J. McP. Ross read the paper and commented on its worth. This paper is published in this issue.

Mr. Jay, Mr. Mills, Mr. Tyrrell and Mr. Uttley spoke of the worth of flowers and gardens. Dr. Fletcher, of Ottawa, will give an address June 6 on Insect Pests, which will be illustrated by stereopticon views.—(H. R. Frankland, Pres.

Ottawa Society's First Meeting

The first exhibition this season of the Ottawa Horticultural Society was held in May. A large

WE wish to thank our many customers for a spring business much beyond our anticipations.

Be sure you are on our mailing list for our Fall Catalogue of Bulbs, Ornamental Shrubs, Hardy Perennials, etc.

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Will be given in six prizes to the readers who buy goods to the greatest value on or before **July 15th, 1905**, from the advertisers in this month's issue of **The Horticulturist.**

The first prize of $5 will be given to the reader whose purchases aggregate the most. The remaining five prizes of one dollar each will be distributed in proportion to the value of the purchases of the applicants. A handsome premium will be given to every person who does not win a cash prize.

Readers must notify advertisers that they saw their advertisement in this paper

When applying for a prize, they must inform this office of the name or names of the advertisers they dealt with, and the value of the goods they purchased from each.

Application for this bonus must be made to this office on or before **Ju'y 18th, 1905.**

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number were present, and the display of flowers and plants was a fine one. Mr. W. G. Black, president of the society, delivered an address on the benefits of growing plants, flowers, etc. Superintendent of the government park, Mr. T. E. Davis, gave a particularly interesting and novel address on the arrangement of color in budding plants. The next show will be held June 20, when Dr. Fletcher, of Ottawa, will give an address on What Flowers Do.

An Interesting Meeting

The subject of an interesting address delivered before the Port Dover Horticultural Society recently by Mr. Wm. Hunt, of Guelph, was "Beautifying the Home Grounds, and the Propagation of Plants." Some 20 questions of a practical nature were asked by different members in the audience and promptly replied to by Mr. Hunt.

This society is distributing aster seed this spring to the pupils of the public schools, who are much interested in the fall show, when they will have a chance to show the results of their labors. The society is also giving to members trees, plants and garden seeds.—(S. F. Butler, secretary.

RUBBER STAMPS

The Superior Mfg. Co. - - Toronto, Ont.
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STENCILS

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion ; minimum charge, fifty cents in advance.

WANTED — SUBSCRIPTION CANVASSERS for The Canadian Horticulturist both in cities and in the fruit districts of Canada. Liberal commissions offered. Good men soon put on salary. Write The Canadian Horticulturist, Rooms 507-508, Manning Chambers, Toronto, Ont.

FOR SALE—FRUIT FARM OF 200 ACRES, Township of Niagara, will be sold en bloc or divided to suit purchaser. Hundreds of farms, stores, factories, etc., on my list. W. J. Doran, Manning Chambers, Toronto.

GREENHOUSE AND STOCK FOR SALE—TEN thousand feet of glass ; one of the best equipped greenhouses in Toronto, located in the best residential sections of Parkdale, large plant trade; residence, stable and everything in good condition Apply to F. C., care of The Canadian Horticulturist.

LANDSCAPE GARDENING

Parks, Cemeteries, Public and Private
Pleasure Grounds made by . . . . .

Chas. Ernest Woolverton, Landscape Gardener
GRIMSBY

Drawings made to a scale, so that any gardener may carry them out. Correspondence solicited.

Gave 300 Plants.—In May the Hespeler Horticultural Society distributed 300 plants, consisting of coleus and geraniums, to the school children. A very pleasant and interesting meeting was held, at which Mr. Wm. Hunt, of Guelph, spoke, giving many valuable hints regarding seasonable garden topics and plant propagation. This meeting was one of the best of a series of many meetings at which Mr. Hunt spoke this spring.

Proposed County Competition in Apples

It is proposed to have this year at the annual Fruit, Flower and Honey Show, to be held at Toronto in November, a county competition in apples. The County Councils are to be asked at their sessions in June to make a grant of $25 each, which it is proposed to divide into four prizes of ten, eight, five and two dollars, to be limited to growers in the county offering the prize. The exhibits shall consist of not more than five varieties for domestic and five for commercial purposes, each exhibit to consist of five named apples on a plate. The apples shall be judged by points, as follows: Form, 5; size, 15; color, 20; quality, 15; uniformity, 20; freedom from blemishes, 25; total, 100. Ten points will be added for correct naming.

The Ontario Fruit Growers' Association will pay express charges from the point of shipment to Toronto and will keep the fruit in cold storage till the show is held. Growers will simply have to pack their fruit and deliver it at the nearest express office, when their responsibility ceases. There will be no entry fee.

The Ontario Fruit Growers' Association has also arranged for delegations to wait on every County Council at their June session to ask for the grant. Fruit growers are invited to act on these county deputations.

The proposal has met with much favor, and it is needless to enter into any argument to show what an advantage it would be in giving an impetus to the fruit industry in all parts of the province. The money given by the County Councils will all come back to their counties in the form of prizes.

Fruit Crop Conditions in Ontario

Special crop reports received by The Horticulturist from correspondents in the Niagara and Leamington districts under dates as late as May 23 and May 24 indicate that crop prospects in those important fruit sections are bright. Late frosts have done some damage, but at the date of writing the correspondents did not consider the damage serious. The reports are as follows:

QUEENSTON.

H. St. C. Fisher: The prospects for cherries are very bright. The trees have blossomed well, and if all goes well there will be a large crop. Strawberries are rather light, as not many were planted this spring. I have seen very few good patches. The late frosts will greatly lessen the crop. All other crops are looking well.

SIMMERS' SEEDS

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and are the best that grow. We have the most complete assortment, and the finest strains of garden and flower seeds on the market. Catalogue describing such, free for the asking. We can also supply

Roses

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Fruit Trees
Ornamental Trees
Evergreen Trees
Herbaceous Plants
Dahlia Roots
Gladiolus Bulbs
Etc., Etc.,

of the very best stock at moderate prices. Try us for success.

J. A. Simmers

143, 145, 147, 149, 151 King St. E.,

Toronto, Ont.

"CANADA'S PREMIER SEED HOUSE"

JORDAN STATION.

C. M. Honsberger : Strawberries have wintered in fine shape and are full of bloom and promise a full crop. A light frost in the morning of May 21 injured some blossoms, but to no serious extent. Peaches are in full bloom and promise well where trees were not allowed to overbear the past two or three seasons. Cherries are literally covered with bloom, more especially the Early Richmond, which bore a heavy crop last season. The weather for fertilization was fine, so much so that the assistance of the busy bee was not required.

FRUITLAND.

Jos. Tweddle : Cherry buds came through the winter in excellent shape, with full bloom and weather mostly fair during bloom. We should have a splendid crop. Strawberry prospects are first-class. We had a heavy white frost May 21, but I have heard of no particular damage to strawberry bloom. Other fruits, including apples, are looking well, and should yield a heavy crop. Grapes are only fair; quite a proportion of buds seem to be dead.

BURLINGTON.

A. W. Peart : The general fruit outlook is bright. Trees have wintered well and bloom appears sufficiently plentiful, especially with plums. The prospect for cherries is excellent, notably the sour varieties. Apples, pears and peaches also promise well. Strawberries generally passed the winter in good condition and their appearance indicates a fair return. Blackberries, raspberries and currants promise an average crop.

W. F. W. Fisher : Strawberries, vines last season ran moderately well, wintered fairly, promise a two-third crop. Cherries, trees thrifty, bloom heavy. Pears, trees fairly healthy, bloom medium. Plums, trees fairly healthy, bloom heavy. Apples, trees look well, very full of bloom. Raspberries, injured some by winter, two-third crop. Blackberries, promise well.

LEAMINGTON.

E. E. Adams : The Early Richmond cherry shows little or no fruit, but the Montmorency is all right. Strawberries will be a good crop, providing we have enough rain to develop the fruit fully at ripening season.

THE SPRAMOTOR MACHINES.

There was a time not long ago when it was necessary to go into foreign countries for any special machinery. In many lines this is changed. In 1896, when the Spramotor Company won the Government spraying contest at Grimsby, there were 11 makers of spraying machinery in Canada. All of these have tried to sell out to the Spramotor Company, but none were bought. It was thought that a specialty like the Spramotor could not live in Canada owing to the restricted market, but by adhering to

JAPAN SNOWBALL.

CANADIAN GROWN

Trees, Plants and Vines

All kinds of

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A fine assortment of

Ornamental Trees and Shrubs

Read our new illustrated catalogue;
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Salesmen wanted.

HELDERLEIGH
NURSERIES

E. D. SMITH, - Winona, Ont.

Money Given Free to People who buy Goods from Advertisers in this Issue.
See Notice in Advertising Columns.

original lines and cultivating the foreign market a good business has resulted, sufficiently large to keep a staff of expert mechanics at work the year round. Four years ago the United States trade was large enough to warrant the company starting in that market, and each year since the trade has doubled, so that it is now eight times what it was the first year. When it is remembered that this is the hardest market in the world to capture it will be seen that the Spramotor has merit.

Over 5,000 Spramotors have been supplied to one manufacturer of paints in the United States to apply their product. Mr. W. H. Heard, inventor of the Spramotor, is the possessor of many patents in this and foreign countries, but the business is built entirely upon a commercial basis. Not one cent has been added to any article made by the company because of its being patented; the selling price being based entirely on the cost of production.

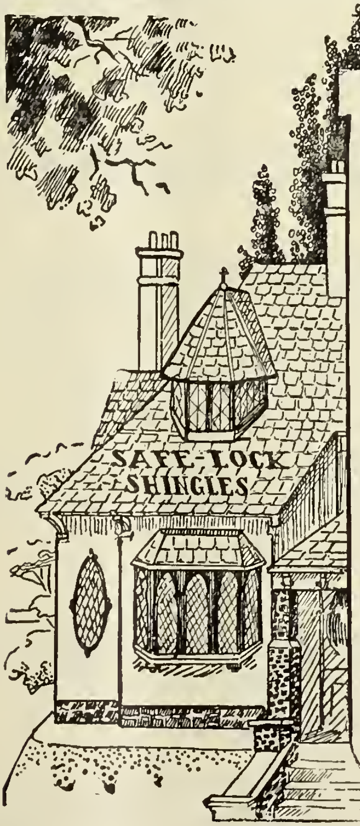
Every Government in Canada has used the Spramotor and pronounced it good, and use no other. The general Government at Washington, together with all the State Governments in the United States, use the Spramotor.

There are more Spramotors in use in Canada than all others combined. Mr. W. S. Blair, of Nova Scotia, and A. McNeill, Chief Fruit Division, Ottawa, say that the Spramotor has contributed as much to the success of the fruit growers in Canada as any other cause, by making it possible for them to save a larger percentage of their crops than would otherwise be possible. The absence of complaint against spraying machinery in Canada is largely attributable to the effort of this company, whose products are recognized as the standard of excellence. A catalogue of 80 pages may be had on request.

ARE DOING A LARGE BUSINESS.

A recent visit to Gammage & Sons, of London, found this firm in the midst of their spring plant trade. Thousands of plants were being shipped to all parts of the Dominion—we noticed cases of plants addressed to points in Nova Scotia and New Brunswick in the east and Winnipeg, Nelson and Vancouver, B. C., in the west. Nor is their trade confined to Canada alone, a number of shipments having been made to the United States.

Pelargoniums, of which the firm have made a special feature this season, have proved a great success. Additional time and space will be given to them in the future. Preparations are well under way for planting chrysanthemums and carnations. Said Mr. Gammage, "We were handicapped last year with building operations, having added 40,000 feet of glass, but this year we are taking time by the forelock as, having no building to do, we can give our stock proper attention."



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make a perfect roofing for HOUSES, BARNS, STORES, etc. Weather-proof, ornamental, lasting in quality, protect from fire and lightning.

If people would realize the danger in using wooden shingles, and making fire-traps of their buildings, they would use exclusively Galvanized "SAFE-LOCK" Shingles. They are easily applied; add to the handsome appearance of any building; keep rainwater clean, as no dust adheres to them; should easily last fifty years, without any painting or attention, as they have no parts to get out of repair, and interlock each other on all four sides. *They protect from lightning*, and give their owners a contented mind, which makes up for the difference in first cost as compared with wooden shingles. In the long run they are the cheapest roofing sold.

Send us rafter length and width, for estimate, and we will make you an interesting proposition. Catalogues mailed free and samples sent by express, you paying the express charges, which will be allowed on first purchase.

The Metal Shingle and Siding Co., Limited
Preston, Ontario
Manufacturers of all kinds of Metal Roofing, Corrugated Sheets, Siding, Ceilings, Ventilators, Tanks, Stanchions, Watering Bowls, etc.

FAVORABLE REPORTS.

Some reports just received on Arnott's Concentrated Horticultural Manure :

From Messrs. Geo. Dobbs & Son, Auburn, N. Y., U. S. A. : "The 25 pounds we ordered last fall have given us excellent results. Please send us 100 pounds more."

From the Fenwick Nursery, Halifax, N. S. : "Everything in which the "food" was applied is doing well. The Calla and Easter lilies were beautiful. Chrysanthemums are looking well, also hydrangeas, fuchsias, geraniums and bench roses."

From the general superintendent department of parks and boulevards, Detroit, Mich., U. S. A.: "The sample of Arnott's Concentrated Horticultural Manure gave satisfaction."

A LADDER IN THE ORCHARD.

So long as fruit trees grow taller than unassisted man can reach so long will it be necessary for him to have at hand some assistance in reaching the higher parts of the tree. Before the leaves are put forth in the spring the careful orchardist prunes his trees and examines every part carefully for signs of disease and for the rings of eggs of the tent caterpillar. Later he may require to get to the high branches to relieve them of an overload of fruit which threatens to break the tree or to leave the quality of fruit inferior. And later still he must climb to where the ripe fruit is and bring it down for use. It will not do to wait till it falls down to him or to knock it down with sticks and stones as we did when we were boys.

For all these purposes he must have a ladder, and a ladder which is light, handy and strong and which can be put up in the middle of the tree as well as against the outside. The old-fashioned single ladders have served their day, but with the spraying machines, binders and the cream separators have come in the extension ladder. The fruit grower who has only one tree should have an extension ladder. It will pay him handsomely, and proportionately it will pay the man who has many trees.

Favorable Season for Packing.—We have had a splendid season for packing, writes Mr. E. D. Smith, of the Helderleigh Nurseries, at Winona, and have got out our stock in excellent time and in splendid shape. We had 150,000 trees dug in the fall and heeled in my above ground cellars. This enabled me to get the goods out to the planters over the country earlier than could possibly be done if everything had to be done in the spring, and the stock was in better shape as it was not damaged by the winter, as it sometimes is, although there was very little damage last winter.

I take a number of the best fruit journals published in the United States, but I consider The Canadian Horticulturist the most complete and valuable of any.—(J. L. Hilborn, Leamington, Ont.

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THE KIND THAT GROW

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PALMS, ROSES, SHRUBS, CLEMATIS, Etc.

All the leading varieties at moderate prices.

POULTRY SUPPLIES

Agents for the Genuine Cyphers Incubators and Brooders. Catalogues free.

The Steele, Briggs Seed Co.
LIMITED
Toronto, Hamilton and Winnipeg
Canada's Greatest Seed House.

CARNATIONS

PLANTS FROM FIELD

WE will have a quantity of the leading varieties of Carnations to dispose of. They will be ready for lifting by August. If you are likely to be short of stock, write at once for prices.

JOHN H. DUNLOP
644 Lansdowne Ave. TORONTO

In the Vineyard of the Oka Agricultural School, La Trappe, Que.

A school which has turned out many well trained horticultural graduates is that known as the Oka Agricultural School at La Trappe, Que. Last year about 75 pupils followed the different courses. This year the number of students was still larger. The complete course occupies two years. The vineyard is about 10 acres. The chief varieties grown are Beaconsfield, Concord, Moore's Early, Bacchus, Delaware, Roger's No. 9, Vergennes, Duchesse and White Virginia. The vineyard comprises also wild and half wild vines, Rougemont, etc. These native vines, on account of their hardiness, are very easily cultivated. They are used especially to give wine a better color. The orchard covers an area of 70 acres and contains 5000 fruit trees, including 150 varieties of table and cider apples. The orchard is a regular experiment station for the Province of Quebec, as the principal varieties of fruit are tested there. Plum and pear trees are also cultivated on a large scale. Among the plums held in high esteem at La Trappe is the "Perdrigon." The Flemish Beauty pear is quite successful Pears, plums and cherries and small fruits harvested at La Trappe are put up in glass jars and are a favorite on the market. Some of these jars were sent to the Japan exhibition, where they brought a high price.

The Canadian Horticulturist

JULY, 1905

VOLUME XXVIII Number 7

HOW TO PACK AND WHERE TO MARKET EARLY APPLES*

J. F. SCRIVER, FRUIT INSPECTOR, HEMMINGFORD, QUE.

I HAVE been in a good position the last three years to study this question. I have seen the apples on their way to market, the way they were packed, the condition they were in, and have also received reports of the condition in which they were landed in the Old Country and in Winnipeg. I have also seen most of the returns and am possibly better able to decide the best way to pack and the best markets than most growers or buyers.

By early apples I mean Duchess, Wealthy, Alexander and St. Lawrence, and would also say a few words on the Fameuse. These are the only early apples that can be handled with any profit. More than half the Duchess raised in Quebec go to waste every year. You will say that this is because there are too many raised. I agree with you there, but I also say that, if you know how to handle them, three years out of four, there is a profitable market for them. Last year was an unfortunate year for the exporters of apples, especially the early varieties. The exceedingly large crop of apples in England and the continent kept prices very low. Even with these drawbacks good Duchess, properly put up, brought fair prices in Glasgow.

Glasgow is the best market in Great Britain for our early apples. The trouble with most of the Duchess shipped last season was that they were immature and too small and green. In exporting you must allow them to become full grown, and fairly colored, being careful, however, to pick them before they are too ripe. If your apples are a good size and fairly well colored, I would certainly advise you to put them up in boxes. If not real No. 1, put them up in barrels, as it never pays to put up poor fruit in boxes. Ship in refrigerator cars, and cold storage on ships.

If you pack in barrels use the eight hoop barrel; pack barrels thoroughly while filling and do not use too much pressure. Everything I said in regard to packing and shipping Duchess apples to the Old Country applies to shipping to Winnipeg. Winnipeg is a better market for small green stock than the Old Country. The first Duchess shipped to Winnipeg brought $2.50 to $2.75 net, but the market became overloaded and the Duchess brought very low prices. I heard of one box which netted 16 cents. The large shipments to the west were caused by low prices in the Old Country, which are not likely to occur again for some years. Last year Winnipeg buyers did not receive half the Duchess they wanted.

The barrel is the best package to use for the shipment of apples to the west, although some shippers have secured good returns by shipping in boxes. The apples should be sent in refrigerator cars or the cars iced before loading, because, although the railroads agree to do this, and you have to pay for it, sometimes the bunkers are not well filled. Your apples become heated, and the car which might have brought you a good profit entails a heavy loss.

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* An address delivered at the last annual meeting of the Quebec Pomological and Fruit Growing Society.

The demand from Montreal and smaller towns for these apples is limited. I sold 200 baskets, 12 to the barrel, in Montreal last summer at 40 cents, netting about 30 cents, which paid well. The next week, however, prices were down to 25 cents, which did not pay.

When Duchess trees are overloaded, as they often are, it is a good plan to pick and ship some of the best in baskets about the first of August. Those left on the trees will grow much faster and be ready to ship in two or three weeks.

A GOOD VARIETY.

The Alexander, I consider, one of the best, if not the best money maker we have in Quebec. If I was setting out an orchard I would set a good proportion of Alexanders. Ontario apple growers and probably some of the Quebec growers may dispute me a little, but the Ontario men must understand that the Quebec Alexander is altogether a better apple in many ways than its Ontario brother, especially in its carrying qualities. It is also more even in size and of better color.

The Alexander tree is perfectly hardy, a good bearer, and the fruit is 75 per cent. to 90 per cent. No. 1. It is never affected by scab, and very little by worms. When picked in time and picked properly these apples always land in the Old Country in good condition. They brought the highest price of any apples sold in the Old Country last fall. One carload of 40-pound boxes, four to the barrel, brought $1.25 net, f. o. b. Montreal. Another carload, in barrels, made a net of $3.85. All the Alexanders shipped in proper time brought paying prices, even in last year's poor market.

I would strongly advise shipping all Alexanders in boxes. It is almost impossible, on account of their large size, to pack them in barrels, ship them any distance, and prevent them from becoming slack. Pack them in layers in boxes and tighten with a little excelsior. I would recommend Glasgow as the best market, although they also do well in Winnipeg and the west when landed in good condition.

One of the best points of this apple is the large proportion of No. 1 apples. A farmer in Hemmingford last fall sold his Alexanders for 90 cents a barrel on the trees. From eight young trees he had 30 barrels of No. 1, two barrels of No. 2, and only one barrel of culls. A neighbor of his had 46 barrels of No. 1 and three barrels of No. 2. I never heard of this being equalled in any season by any other variety of apples. These apples should always be shipped in cold storage and in refrigerator cars.

(Continued on page 277)

It is my opinion that if cooperative associations will keep their grades up to the standard, buyers will soon hunt for their brands. Buyers are anxious to obtain good brands and will naturally go to the houses that have the best name for good packing and high-class goods. The box is certainly the fruit package of the future.—(H. W. Dawson, commission merchant, Toronto.

"There is considerable difference of opinion with reference to the robin in the Eastern States," said Mr. A. N. Brown, of Delaware, to a Horticulturist representative. "An anti-robin bill was defeated in New Jersey by the women and children of the state, who secured large numbers of signatures to petitions against the bill. I expect, however, to see it pass yet."

THE ROBIN AND THE FRUIT GROWER

C. W. NASH, TORONTO, ONT.

THE ever increasing number of insect pests, both native and imported, which prey upon our crops, and the loss sustained by farmers, gardeners and fruit growers by reason of their ravages, has compelled crop producers to turn their attention seriously to the study of the natural laws which govern the production and destruction of this form of animal life. Careful investigation, by men whose training has properly qualified them for the work, shows that nature always maintains an equilibrium between all form of life, both animal and vegetable, so that no one form shall exist in sufficient strength to exterminate another. That birds, which are wholly insectivorous, or which never feed on the fruit or other parts of cultivated plants, are beneficial, may be accepted without question; but great difficulty has sometimes arisen in determining the exact status or value of birds which feed on insects and vegetable products in varying proportions. Much depends on the personal interest of the people whose testimony is given and also on local conditions which can not be given general application. Thus it is we find some fruit growers loudly condemning certain birds as very injurious to them in their locality, while other fruit growers in a different district, and farmers and gardeners generally, are perfectly certain that these same birds are of the greatest value to them as destroyers of noxious insects.

VALUE OF THE ROBIN.

The best known and most familiar bird in this debatable class is the robin, and opinion is very strongly divided as to its utility. Some fruit growers condemn this bird with great emphasis; others weigh its merits and demerits more carefully and assert that it much more than pays for the fruit it eats by the destruction of insects.

Robins under certain circumstances do take a large number of cherries, strawberries, raspberries and some grapes, thereby causing individual fruit growers some loss, but the question remains whether or not the robins by their work throughout the season, and the benefits they confer on other classes of the agricultural community, do not more than compensate the community for the loss sustained by the few, and further, whether or not the fruit growers cannot protect themselves against loss by robins without destroying them.

As to the first question the case against the robin has been very strongly, and I think fairly, put by a large fruit grower in the United States, who is an uncompromising enemy of the bird. This gentleman shot a number of robins while they were feeding on his fruit and examined the stomach contents of those killed, the result showing the percentage of fruit and insects contained in each. When the birds were actually engaged in feeding on small fruit 84 per cent of fruit and about 16 per cent. of insects were found, a much larger proportion of fruit to insects than has ever come under my personal observation and larger than I have elsewhere seen recorded

If all the robins in the country consumed as large a proportion of fruit as these birds and fruit growers suffered a proportionate loss, then there would be just cause for complaint against the robins. We know, however, that even during the height of the strawberry and cherry season that the birds rarely take as large a percentage of fruit as this, and we also know that the large growers rarely suffer any appreciable loss.

PLENTY OF EVIDENCE.

The question as to what is the true status of the American robin with regard to agriculture and horticulture has been under investigation in the United States and Canada for over 40 years, so that there is no lack of evidence on which to arrive at a conclusion. The result of these investigations shows unmistakably that, except during the months of June and July, when the strawberries and cherries are ripening, the robin is of the greatest possible value to the country. From early March until the middle of June robins' food consists of insects and such berries as may hang on the trees through the winter. Three specimens shot by me on April 3 last year had each eaten 150 to 200 small dark caterpillars. One shot April 11 contained one large spider, a large number of small beetles, principally weevils, and some mountain ash berries. In May and the early part of June I have always found the robins' food to consist chiefly of cut worms, wire worms, white grubs and earth worms; at this time the birds are feeding their young and they then destroy a vast number of these injurious farm pests. This is one of the robin's greatest merits, because of all our insects the underground cut worm is about the most destructive, for in feeding it just comes above the surface and cuts off the entire plant, or if the plants are very young and the stems small it cuts off a half dozen or more, only eating a small section out of the stem of each, leaving the plants dead on the ground.

Effectual remedies against their attacks are very difficult, and in some cases impossible, to apply, so that for the most part we are compelled to rely on the ground feeding birds, of which the robin is an example, to keep them in check.

In June, 1889, I experimented with a young robin shortly after it was able to feed itself, for the purpose of ascertaining just what amount of insect food it would require daily when at that stage of growth. On June 9 the bird weighed exactly three ounces. From time to time during that day I gave it all the cut worms it would eat, having previously weighed them. The grubs averaged 30 to the ounce, and the bird ate five and a half ounces of them in that one day. Had the bird been at liberty it would probably have eaten some insects of other species and fewer cut worms, but this shows the amount of insect food required by a young robin when growing. The average number of young in a brood is four, and there are usually two broods in a season. A very simple calculation will give a good idea of the number of insects destroyed while the young are being raised.* It is the young of the first brood after they have flown and are left to their own resources which are apt to visit the strawberry patch and cherry trees, and it is no doubt very provoking to the fruit grower on a small scale, to find them helping themselves to his scanty supply. Towards the end of summer and through the autumn young and old congregate in flocks and feed on insects and various berries borne by wild shrubs. Late in the fall they will sometimes visit the vineyard, but not as a rule until after the marketable grapes have been gathered.

EXTENSIVE INVESTIGATIONS.

The biological survey of the Department of Agriculture at Washington has conducted an exhaustive enquiry into the food habits of the robin. The result of this has been summarized by Prof. F. E. Beal, of that department, who says: "An examination of the stomachs of 330 robins, collected in various parts of the country, shows that cultivated fruit forms but a very moderate percentage (less than eight per cent.) of their diet, and that practically all of this is eaten in June and July. Vegetable food forms nearly 58 per cent. of the stomach contents, over 47 per cent. being wild fruits. Cultivated fruit amounting to about 25 per cent. was found in the stomachs in June and July, but only a trifle in August. Wild fruit, on the contrary, is eaten in every month, and constitutes a staple food during half the year. No less than 41 species of wild fruit were identified in the stomachs.

The depredations of the robin seem to be confined to the smaller and earlier fruits, and few, if any, complaints have been made against it on the score of eating apples, peaches, pears, grapes or even the late cherries. By the time these are ripe the woods and hedges are teeming with wild fruits which the bird evidently finds more to its taste. Cherries and strawberries, unfortunately, ripen so early that they are almost the only fruit accessible at a time when the bird's appetite has been sharpened by a long continued diet of insects, earth worms and dried berries, and it is no wonder that at first the rich juicy morsels are greedily eaten."

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* Birds of Ontario in Relation to Agriculture. C. W. Nash, Department of Agriculture, Toronto, Ont.

THE CASE PRESENTED.

The case, therefore, stands in this way: It is admitted that during a part of June and July (say for about 30 days) the robin consumes a certain amount of small fruit. To this extent the fruit grower is a loser. The farmers and market gardeners, however, lose nothing by these birds, but on the contrary have to depend on them principally to keep in check the underground insects which are so injurious to their crops. Except during the period stated the fruit grower also benefits greatly by the robin's work. Limit the question then to the fruit grower alone and how does it stand? Suppose each robin ate two ounces of cultivated fruit each day for 30 days, which would be a remarkably liberal allowance. This would give three pounds 12 ounces for each bird, worth in money about, for strawberries 15 to 20 cents, and for cherries of the best class 30 to 40 cents. As against that every cut worm previously eaten by the bird would have done damage to probably as large an amount if it had been allowed to fulfil its destiny, and then there are tne myriads of other insects which the bird has eaten to be taken into consideration.

Speaking generally, therefore, it must be considered that the robin ranks as one of the most potent factors in preventing the ravages of insect pests.

It may sometimes happen, however, that an individual fruit grower may find that the quantity of fruit taken by the birds is more than he can well bear, although he realizes that generally the robins are beneficial to himself and to the country. When this happens it usually arises from the fact that a great number of birds are concentrated on too small an area, in which case they draw too heavily on the small resources open to them.

A SIMPLE REMEDY.

Is it possible then to save the birds and at the same time reduce the loss of fruit so that it shall not be a matter for serious consideration? This problem has been solved by the easy method of providing the birds with fruits which are useless to us, but which they prefer to those we consider the choicest. Probably the two best trees for this purpose are the common red cherry and the Russian mulberry. These are both vigorous growers and profuse bearers, ripening their fruit early, and the birds prefer their berries to any of the cultivated sorts. The mulberry is particularly attractive to them, flavorless though it seems to be.

By being a little liberal in planting these trees about the country we can save the small fruits and at the same time have about us robins enough to keep in check the most dangerous enemies of our staple crops of farm and garden.

An advantage of clover growing in an orchard in autumn is that much of the plant food in the soil which has been liberated and made more easily available by the constant cultivation during the early part of the summer, is prevented from leaching by being used by the growing plants, the clover thus becoming a " catch crop " as well as a cover crop.—(W. T. Macoun, Central Experimental Farm, Ottawa.

REPORTS AND BULLETINS

A NUMBER of very interesting bulletins and official reports reached The Horticulturist during June. The annual report of the Inspector of Fumigating Appliances for Ontario, Mr. P. W. Hodgetts, shows that the enforcement of the Fumigation Act has driven several smaller nursery firms out of business. Inspector Hodgetts reports that in every case the nurserymen are seeing that the stock sold bears the certificate of fumigation. Fruit growers are well pleased with the work done, and the members of the Niagara District Association recommended that if the inspector found scale on nursery stock the previous year the facts should be made public through The Canadian Horticulturist. The report contains a list of Ontario nurseries and may be had by application to the Department of Agriculture, Toronto.

Bulletin No. 115, of the Experiment Station, Burlington, Vermont, discusses "Disease Resistant Potatoes." After many experiments to show stem resistance to disease and tuber resistance to rot and the chances for increasing this resistance it draws the following conclusions: (1) Some varieties are less subject to vine injury than others, (2) some show greater resistance to rot than others, (3) some show close relation between resistance of vine to disease and resistance of tuber to rot, (4) selection has not given visible increase of resistance.

Bulletin No. 113 of the same station deals with spraying mixtures and concludes by giving a spray calendar. Preparation of sprays, objects of spraying and such questions are fully explained. The bulletin is worth writing for.

"Potato Spraying Experiments in 1904," No. 264, New York Experimental Station, Geneva, N. Y., gives a comprehensive review of extensive experiments carried on with Bordeaux mixture for late blight and potato rot. At the station five sprayings gave an increase of 233 bushels per acre, and three sprayings an increase of 191 bushels per acre. In 14 experiments on farms including 180 acres, the average gain was 62¼ bushels and the average cost for each spraying 93 cents per acre. In 41 volunteer experiments which farmers carried on, including 363¾ acres, the average gain was 58½ bushels per acre and the average cost 90 2-3 cents per acre. Judging from these figures no potato grower can afford to neglect spraying. The bulletin is a valuable one.

The Experiment Station, Orono, Maine, in bulletin 108, deals with "Orchard Moths," giving notes on common orchard caterpillars and some insect eating birds. Bulletin No. 109, from the same station, discusses the "Apple Maggot and Other Insects." Preventive and remedial measures are given. Allowing hogs and sheep to eat the windfalls from August until the crop is harvested is mentioned as being one of the cheapest and most effective remedies.

The Agricultural Experiment Station of Urbana, Illinois, discusses "The Curculio and the Apple" in Bulletin 98. The life history and habits are fully given, as well as characteristics which distinguish it from the plum curculio, Neglect of pruning, cultivation, spraying and fertilizing engenders conditions which favor its multiplication. Spraying with arsenical poisons has a beneficial effect in an isolated orchard. Destruction of fallen fruit and surface cultivation are mentioned as very efficient remedial measures.

I have never used boxes for shipping apples, and shall not as long as I can get barrels at 50 cents or less.—(Irvine Hicks, South Bay, Ont.

The Horticulturist is the best fruit magazine I have ever read.—(A. A. Bligh. Waterville, N. S.

The Canadian Horticulturist is getting better all the time.—(Geo. Shuert, Brantford, Ont.

COOPERATIVE PACKING BY GROWERS

D. JOHNSON, PRESIDENT FOREST FRUIT GROWERS' ASSOCIATION, FOREST, ONT.

IN the early part of last season the Forest Fruit Growers and Forwarding Association intended to have each member pack his own fruit under inspection. If any package was found not properly marked it was to be rejected or marked according to its proper value. The inexperience of some, however, and the diverse grading caused the association to adopt the central packing house.

For this purpose a rink was rented and to this each variety of apples was brought as the fruit matured. It was gently packed in barrels, with the head slipped on by hand, and hauled either in racks with springs or with some straw in the bottom of the rack. Each man's apples were kept in a separate row and the man's name and the variety of the apples were written on the top with pencil. The number of barrels of unpacked apples was credited each grower on the books.

In packing, each man's apples of a certain variety were emptied on the packing table, where they were carefully graded by girls. The XXX were put in a basket to their right, the XX in a basket to their left, and the culls in bags attached to the tables.

Each man working in the packing house had his special work to perform for which he was responsible to the manager. It was the duty of one man to properly face, nail and cleat each barrel of fruit required. The facing had to be a fair representation of what was in the barrel. Each hoop had four nails, each head six and each cleat six.

THE HEAD PACKER'S DUTY.

It was the duty of the head packer to empty baskets, shake down the fruit in the barrels and see that the grading was properly done and that each grower was credited with the full amount of packed fruit of each variety and grade. The shaking down was done by setting the barrel on a plank. Another man was responsible for the facing of the pressed end and for the pressing in of the same. A third man had charge of the stenciling and nailing in of the

Shipping Fruit on a Niagara District Fruit Farm.

Packers getting fruit ready for shipment at J. F. Brennan & Son's fruit farm, Grimsby, Ont., are shown. On the left is Mr, Brennan, who superintends the packing. He has adopted the California style of packing, and has been repaid by the proud distinc-on of landing the best packed Ontario fruit on the Winnipeg market of many large shipments. He has also won high awards at the ational and international exhibitions and has received orders from many parts of the United States and Canada for his celebrated Ashland Fruit."

head. He also had to check off each barrel and record the name of the owner, the variety and the grade as it was loaded on the dray for the car. The manager assisted in every department and was in a position to know exactly the quality of fruit packed in each grade.

The culls were sent to an evaporator, and the money received from this source was used to pay general expenses such as the cost of packing, which amounted to about seven cents per barrel. This may not seem fair to the man with many low grade apples, but when we consider that it costs more to pack poor apples than good ones it cannot be considered an injustice.

The central packing house is perhaps more expensive than the old system of allowing each member to pack his own fruit under inspection, but as dealers have long desired such a system we expect the greater uniformity will cause them to pay enough more to meet the extra expense twice over.

The Forest association has been complimented many times on the good quality of its fruit and on the packing done last season. Our members realize the benefit of spraying, and to ensure a high class fruit this season are spraying at least four times —twice before and twice after blossoming. We expect our output this fall will be ahead of that of last year, and feel sure that the better quality will be appreciated to its proper value by the trade.

Top Grafting the Pewaukee

PROF. H. L. HUTT, O. A. C., GUELPH, ONT.

I have about 40 trees of Pewaukee apples which bear heavily each year, but before maturity a high wind removes fully two-thirds of the fruit. I have been told that as the trees get older they hold their fruit better, but if it drops as badly as it does now I wish to graft them to Ontario, Spy or King. Which of these would you advise me to use ? What is your opinion of the Baxter apple ?—(J. B., St. George.

The characteristic you describe in the Pewaukee of dropping from the tree is one of the worst features of this variety, and as the fruit itself is not of the best quality I certainly would recommend in a section, such as yours, where better varieties can be grown, that such trees be grafted over. All of the varieties you mention are excellent, but of the three I would prefer the King, although this too is liable to drop during heavy winds. This variety is about the same in rate of growth as the Pewaukee, and should work well upon it, and, no doubt, the productiveness of the Pewaukee would help to make up this defect in the King. The Ontario is hardly equal to the Pewaukee in rate of growth, while the Northern Spy is much stronger, but any of these should do well on Pewaukee stock. The Baxter is a large, showy red apple, which originated near Kingston, and is well adapted to that section of the country. It is, however, quite subject to scab, and I would not recommend it for your section of the country, where apples of better quality may be grown.

Cultivation and Cover Crop

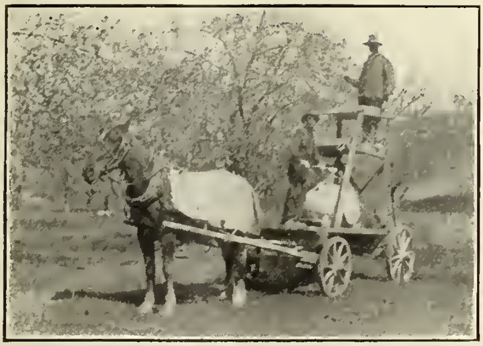
W. H. DEMPSEY, TRENTON, ONT.

CULTIVATION should be commenced as early in the spring as possible, with disc cultivation or gang plow not more than four or five inches, and continued each week or 10 days with a light harrow through July till the middle of August. Then a cover crop may be sown of red clover, barley, oats or peas, which will aid the trees in ripening, and by holding the leaves and snow prevent alternate thawing and freezing and lessen the depth to which the frost penetrates, thus carrying trees through the winter uninjured which might otherwise be killed. If the season is dry and trees heavily loaded it would be better to delay sowing the cover crop, as it would take too much moisture from the trees and cause the fruit to cease growing and prevent its development to fair size.

The Spraying Experiments

P. W. HODGETTS, B. S. A., DEPARTMENT OF AGRICULTURE, TORONTO, ONT.

THE second series of sprayings in connection with the experiments for the prevention of grape rots has just ended at Mr. Shearer's farm near Niagara, as outlined in the last issue of The Horticulturist, are being carried on by the Department of Agriculture at the request of the fruit growers of the Niagara district, whose vineyards have suffered severely the past two seasons through the attacks of the black and brown rots.



A Forest Spraying Outfit

The spraying outfit of Mr. William Frazer, of Forest, Ont., one of the most successful fruit growers in this district, is shown here. Mr. Frazer may be seen in his spraying unifoim on the elevated platform. The Forest growers find the elevated platform a great help in doing efficient spraying.

During April a number of vineyards were visited and a few rows of grapes in each were sprayed with the copper sulphate solution. Starting June 13th, just before the blossoms opened, we again made the round from Winona to Niagara and Stamford, a distance of over 50 miles, with the cart spramotor. Over 4,000 vines at eight different points were sprayed. The standard Bordeaux mixture was used throughout for the grapes.

Soda Bordeaux was applied at Mr. Robertson's farm in St. Catharines to a number of cherry and plum trees to control the rot which is developing seriously owing to the prevalent moist, sultry weather. This mixture is made up of 40 gallons water, 4 pounds copper sulphate, with enough caustic soda or lye (ranging from 18 to 24 ounces according to its strength) to make the whole slightly neutral. The soda replaces the lime, and these will not discolor the fruit. It is claimed that this mixture will not hold to the trees and foliage like the lime Bordeaux, but on the other hand it is more easily prepared, will not clog the nozzles, and may be used almost till the fruit is ripe.

Care must be exercised, however, in testing its strength when prepared. The use of litmus paper in this connection will be readily explained by any druggist and the test is simple. The blue paper should retain its color when dipped in the prepared solution, while the red paper should, under the same conditions, turn blue. Owing to some trouble experienced by the Winona growers fruit men will do well to apply this test to any of the soda preparations.

Hairy Vetch for Green Manure

PROF. H. L. HUTT, O. A. C., GUELPH, ONT.

Kindly advise me if hairy vetch would be good to plow under and then plant strawberries the following spring. What does the seed usually sell at and when is the best time to sow it?—(J. B., St. George, Ont.

A crop of hairy vetch grown this year and turned under next fall should leave the ground in good condition for strawberries the following year, although if the ground is in fairly good condition it might be possible to raise some early crop on the ground this year, such as early potatoes or early peas, and follow with the vetch as a late catch crop. Vetch grows well late in the season and makes a good mat of vegetable matter to plow under when sown as late as the middle of August. The seed this year is quoted at $4.50 to $5 per bushel.

Remedy for Black Knot

H. S. PEART, B.S.A., O.A.C., GUELPH, ONT.

Will turpentine and sulphur mixed painted on growing black knot on plum trees prevent further growth and kill the spores? Can a better mixture be suggested?—(W. C. Archibald & Sons, Wolfville, N. S.

Black knot is a fungous disease, the nature of which has been thoroughly understood for many years. The spores of the disease are carried by the wind in early summer. Spraying the trees with Bordeaux mixture in spring and early summer will prevent fresh infection. Once the disease is established there is no certain remedy except cutting out and burning the knots. Turpentine does not dissolve the sulphur, hence the mixture is no better than turpentine alone.

The use of such substances as turpentine and crude petroleum are not to be commended, as they nearly always injure the tree. United effort on the part of the plum and cherry growers in cutting out and burning knots as they appear and spraying with Bordeaux mixture early in the summer will soon rid a section of the disease.

Thinning and Propping

PROF. H. L. HUTT, O.A.C., GUELPH, ONT.

What is the best method of thinning fruit? Is there any serviceable implement made for thinning purposes? What is the manner in which trees are best propped?—(L. B. Pangman, Salmon Arm, B. C.

There are two general methods of thinning fruit, first by regulating the number of fruit spurs and consequently the amount of fruit by pruning, and second, by removing the extra amount of fruit as soon as it is sufficiently formed to judge of its character. Various devices have been suggested for this purpose, but none of them are as good as going over the fruit and picking it by hand in the usual way. By this means judgment may be used in the removal of the fruit,and care can be taken to avoid the breaking off of the fruit spurs.

Fruit trees should not be allowed to bear so heavily that they require propping. If allowed to grow more than the branches can sustain it is more or less of a drain on the vitality of the tree, apart from the danger of the limbs being broken by the heavy weight of the crop. Propping, however, is much more common than judicious thinning, and where it is resorted to we know of no better plan than placing crutched poles underneath the branches to support the weight. I know of no special kind of supports being used other than this placing of poles underneath the branches, although I have seen light ropes or wire used in large trees to tie up a drooping branch to strong limbs in the centre of the tree, but this method is not so satisfactory as supports from beneath, and where wire or rope is used the branches often break off at the point of support.

Cultivating the Spy Orchard

W. T. MACOUN, HORTICULTURIST, C. E. F.,
OTTAWA.

In raising Spys is it best to cultivate the orchard and sow cover crops, or to let the orchard be in sod and use barnyard manure? The soil is a sandy loam.—(A. J. L.

Cultivating an orchard of Northern Spys or leaving it in sod will depend very much on the character of the soil and the amount of moisture. Trees growing in good soil where they never suffer from drought, even if the soil is left uncultivated, will usually produce fine fruit, providing the fertility is kept up by the application of barnyard manure to the sod. If the soil is poor and there is any danger of drought it is much the best practice to cultivate the orchard and sow a cover crop in the month of July both for protection in winter and for improving the fertility of the land.

I believe the bandaging of trees with burlap, if properly attended to throughout the season, will almost exterminate the moth.—(G. C. Caston, Craighurst, Ont.

HORTICULTURE IN MINNESOTAS

T. G. RAYNOR, ROSE HILL, ONT.

THE conditions under which apples are grown are quite different in Minnesota to what they are in Ontario. Through many ups and downs some of the old settlers have persevered until they have originated varieties that can be grown in this northwestern country. The old fruit growers learned from their many failures with eastern and southern grown fruit trees, that very few varieties were hardy enough to stand the Minnesota conditions.

Men like Charles Gideon, who originated the Wealthy and Gideon apples; Mr. Harris and Mr. Yahnke, who has a seedling which stands equal to our Spy and King in quality and which bears the name of its originator, are great benefactors to their race. There are now varieties which bridge over the season pretty well, in Duchess for summer, Wealthy for fall and early winter, and Northwestern Greening, Melinda and Yahnke for winter varieties.

A Busy Day in the Berry Field.

Pickers at work in the strawberry plantation of Davidson & Co., Meyersburg, Ont , are here shown. Mr. Davidson has two acres of strawberries this season and says that Corsican, Cook and Brandywine are the most profitable varieties for that section. There is no difficulty getting pickers at one cent per box, as farmers come miles to pick and many are turned away.

There are a number of nurseries in the state which are extending their trade even across the line into our Canadian Northwest. The most satisfactory locations for an apple orchard here, as with us, are found to be northern or eastern slopes. However, in most parts of the state there is no choice of slope, and fruit growers are compelled to make these conditions by setting out wind break plantations around their farm buildings and planting their trees on the north side. These catch most of the snow and protect the trees more or less from sun scald and warm winds from the south.

Until recently the wind-breaks have been for the most part of willows, cotton woods and box alders. These break the winds very well in summer, but not so well in winter. In many cases they have been placed so close to the buildings that as Mr. Yahnke puts it, "they have the snow banks in their kitchens."

The coming wind break is the evergreen, one which breaks the winds in the winter time. Many tried these but failed to get them to grow, because they did not know that the sap of an evergreen contains resin, and five minutes' exposure of the roots to sun or wind means dead evergreens. Then many farmers didn't know that in setting them a mud bath was necessary, and as soon as they were planted the roots should be covered.

As Ontario is already over cleared in the older parts more of our farmers should pay attention to the value of evergreen wind breaks about their farm buildings.

No money can be made by holding grapes. When the season for grapes is past, the demand is over.—(Robert Thompson, St. Catharines.

A Rack for Hauling Apples

JOSEPH TWEEDLE, FRUITLAND, ONT.

I HAVE a very convenient rack for hauling apples. It has a set of low steel wheels with wide tires. These can be made to order and to fit any wagon. On this is a set of double bolster springs, which support a lorry platform. The platform can be built of two bed pieces, any width and length a person may desire. The wheels cost $15 to $20, while three ton springs cost about $15. The bed of the rack can be made for about $10. My rack carries 24 barrels of fruit, and if it were 14 inches longer could carry 28 barrels on end.

The way my wagon sits on the springs we can carry the barrels on end. This would not be possible were it not for the springs, as the fruit would be too severely shaken. Were it not for the springs, also, it would not be possible, for the same reason, to drive off the paths. It pays to have these springs, as they make it possible to trot the teams without injury to the fruit.

Objects to the Size

D. YOUNG, ADOLPHUSTOWN, ONT.

THE new apple box adopted by the Dominion Department of Agriculuture will be sold as a bushel and should be 10 x 11 x 19⅝ inches. Between the bushel box and the size of the one adopted there is a loss to the producer of about 350 boxes in the quantity I ship from my own orchard in one season—over 5,000 barrels. This is too much loss. It is not much on one box, but in the aggregate it is heavy. Another objection to the use of such a box is that it is too heavy to handle with cheap help.

The next annual meeting of the British Columbia Fruit Growers' Association will be held at Vancouver. The quarterly meeting in April was at Victoria, in July will be at Nelson, and in October at a place to be selected by the executive committee.

Rapid Spraying

ALEX. GLOVER, WINONA, ONT.

THERE is a statement in the May issue of The Canadian Horticulturist in the article giving Mr. Murray Pettit's and Mr. E. M. Smith's experience with their new spraying outfits, in which I am interested. In it mention is made by Mr. Murray Pettit, of Winona, of ten dollars having been offered an agent for another machine if he would cancel an order for one of his outfits. I believe this statement originated with me. At the time I made it I had been misled in regard to some points of the machine I had ordered, and thought that the Spramotor cart afforded an opportunity to overcome the difficulty. I believe I even went so far as to offer to pay for the Wallace machine I had ordered and to store it, unused, until the agent had an opportunity to re-sell it. After giving both machines due consideration, however, I became satisfied I had better keep the Wallace Power Sprayer which I had ordered. Since I have given it a trial I am perfectly satisfied with the way it works. After using it only long enough to get slightly acquainted with the handling of it we sprayed over 1000 pear, plum and peach trees, of an average age of nine years, on one side in half a day, and did it with only one line of hose, having a four-nozzle head. The point in regard to which I have been misled was in the matter of draft, as I had been told that my team could not handle my machine. I have found that my team can handle it easily, although one of them is a four-year-old colt weighing only 1,080 pounds. I make this explanation because the item in question might injure the Wallace Company and Mr. W. H. Brand, their agent here, as well as other fruit growers who might be misled as I was. I wish it to be distinctly understood that I am perfectly satisfied with my Wallace machine, and would not exchange it for any other.

SOME VALUABLE BULLETINS

EXPERIMENTS in dust spraying have been tried at a number of places in the United States, including the Delaware College Agricultural Experiment Station, from which a bulletin giving the results has just reached The Horticulturist. Two pounds of dry mixture will answer on trees which would require three to four gallons of liquid. Each tree received at each spraying one-half as much copper sulphate and one and one-half times as much poison as are contained in four gallons of Bordeaux mixture with poison. The conclusions arrived at from the experiments are as follows:

The codling moth and apple scab on Nero, July and Red Astrachan apples, were satisfactorily controlled by dust spraying, using Paris green for poison, in 1904. If the dust spray will produce the same results on other varieties of apples it can certainly be recommended. In liquid spraying operations for large orchards a mixing house and storage tanks are necessary, as is also a supply wagon if the spraying outfit is worked to its fullest capacity. This involves a heavy expense most of which would not be necessary in dust spraying. Should the dusting method continue to give the favorable results it has given in its first trial it must soon replace in part the liquid method, except where such sucking insects as San Jose scale must be fought during the growing season.

At present it is probably best to rely on some brand of hydrated lime now on the market and pulverized copper sulphate and Paris green for the dusting material, unless a pulverizing mill is available. In this case, and especially if dry slaked lime is used, the materials should be mixed and run through the mill. The formula now suggested is one pound of pulverized copper sulphate, one pound Paris green or green arsenoid, one pound ground sulphur and 50 pounds limoid, or other hydrated lime. It will perhaps be well to mix the copper sulphate and lime together a day or two before needed for spraying so as to facilitate chemical action between the two. Further testing may prove that a formula with a larger proportion of lime will prove effective, but at present the stronger one will be used.

As to cost, according to the bulletin, the dry spray can be applied on a commercial scale at half the expense of liquid spray.

WINTER KILLING OF PEACH TREES.

Another bulletin recently issued by the Ohio station gives a report of investigations in the Lake Erie fruit belt on the winter killing of peach trees in 1903 and 1904. The conclusions arrived at are as follows:

General cause of unusual susceptibility to cold of the orchards of the Lake Erie fruit belt: prevailing low vitality of the trees.

Specific causes of low vitality of the trees: San Jose scale, leaf curl, lack of nourishing plant food, imperfect drainage.

Exceptional causes of susceptibility to cold in rare cases of apparently healthy, vigorous trees: low, moist, rich black soil which favored an extreme growth of soft, poorly ripened or matured wood; or high culture upon soil rich in plant food which brought about similar results.

The unusually deep, hard freezing of the earth's crust was due, directly, to the continued steady cold, but was intensified, in many instances, by a lack of humus or vegetable matter in the soil, which constitutes nature's insulation of the surface of the earth from cold and heat.

Providing that the orchards had been kept free from fungous diseases and the San Jose scale, by timely and thorough spraying, no injury of trees was found where stable or barnyard manure had been used upon the ground within the last year or two previous to the winter of 1903-4; rarely was an injured tree found standing in sod; no injury was done where the surface of the soil, beneath the trees, had been covered with even a very light mulch; little injury was done where the trees stood in fairly well drained soil containing a moderate amount of fertility and humus; no injury was found where the trees were under the grass mulch method of culture; no injury was observed in any case where the stems of the trees had been slightly banked or mounded with a few shovelfuls or forkfuls of soil, peat or manure.

Very few trees which, within the past few years, had been affected with leaf curl or infested with San Jose scale or borers, remained alive or uninjured; and very few trees existing upon infertile or exhausted soil, depleted of humus, escaped uninjured.

Other bulletins received by The Horticulturist are: one on the maintenance of fertility by the use of lime, from the Ohio experiment station at Wooster; and The Preparation and Use of Sprays, and Disease-Resistant Potatoes, from the Vermont station at Burlington. They contain useful information and are worth writing for.

SELF-STERILITY IN FRUITS *

THEO ROSS, B. A., P. E. I.

FOR some reason which we do not understand many varieties of fruit are self-sterile. The pollen of that variety will not fertilize the pistils of the same variety, as for instance the Northern Spy. The pollen of a flower of a Northern Spy tree may fall on the pistil of a flower of a Northern Spy but fertilization does not take place. We say the Northern Spy is a self-sterile variety, and then we are in the dark groping blindly. This subject of self-sterility has not yet been worked out and it will not be for a long time to come, for self-sterility is influenced by climate and location to quite a degree.

There are some varieties of nearly all kinds of fruits self-sterile, and by a self-sterile variety is meant a variety that is unable to set fruit when alone; in order to be productive it must be set near some other variety. Planting near them more trees of the same variety does not make them fruitful, but if trees of another variety are planted near them they are often made fruitful. Then there are all the gradations from self-sterility to self-fertility. Some varieties will set fruit with their own pollen, but the result will not be nearly as good as if fertilized by pollen from another variety, while again with other varieties it will be just as good.

In some work done at Cornell, Stark pistils were fertilized with Wagner pollen and others with Stark pollen with these results, so with Longfield Greening. In these instances the size was much increased by cross-pollination, but it might have been still further increased if some other variety had been used as a fertilizer. In the case of the Talman Sweet there has been very little improvement, but there again if some other pollinizer had been used we might have had different results. The number of crosses that might be made are very large and in most of our orchards, where there are a great number of varieties, the number made every year is undoubtedly larger but we cannot check up the results.

Experimenting with various pollinizers is not only pleasant work but it requires really no outlay, and much good might result. All that is necessary is a few paper bags and some twine and a pair of scissors. Cut the stamens from some blossoms as soon as they open and fasten paper bags over them to prevent pollination. Then, when the pistil is ready, dust some pollen taken from some stamens that have been protected

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* Extract from an address delivered at the annual convention of the Prince Edward Island Fruit Growers' Association.

in the same way and cover again with paper bags. In this way results can be noted but not in any other way. Even if there should be only one variety in an orchard the pollen might come a long way in the wind or bees might carry it. It is only when every precaution is taken that one can be sure. Even if this work has not been carried on very extensively cross-pollination of varieties is no longer a theory. It is an established orchard practice.

Among the common varieties of apples more or less self-sterile are Gravenstein, King, Northern Spy, Red Astrachan, Russet, Winesap.

Mostly self-fertile: Baldwins, Ben Davis, Fallawater, Greening, Duchess.

Most of our common plums are self-fertile, such as Burbank, Bradshaw, Green Gage, Lombards, Damsons, etc. Strawberries very often lack stamens altogether, as the Anna Kennedy, Arrow, Avery, etc. while others like the Crescent have so few and so poor stamens that they are practically self-sterile.

These observations ought to be of some practical worth in the setting out of an orchard. Some varieties of fruit will not bear at all unless they are planted near other varieties, while nearly every variety is benefited by cross-pollination. Do not then set out a large block of any one variety, but mix them, setting varieties that bloom simultaneously side by side, and try to find out which varieties cross best. If we have large blocks of one variety it might be advisable to put on each tree some grafts of other varieties to act as pollinizers.

Canning Fruit*

MRS. M. M'KERLIE, BURLINGTON, ONT.

IN canning fruit the first thing is to select good fruit, which is always more satisfactory if not too ripe. Next select good air tight jars. I have always found it the best plan, and one which causes the least work in canning time, to wash, scald and air jars, then replace the same tops as soon as the fruit is out. They are then ready for fruit after a single rinsing with hot water. It is always a safe and a wise plan to use new rubbers each year.

The following recipe for syrup is one which I have used and can recommend. To every three pounds of sugar allow one quart of water and boil half an hour. Then draw kettle to back of the stove, where mixture will not boil. Let it remain until you have jars filled with fruit. If berries or small fruits be careful not to crown so as to crush, but large fruit jars can be filled closely.

After jars are filled with fruit stand on a wet cloth and fill with hot syrup, then seal tightly, being very careful to exclude all air from the fruit before sealing. Set the jars in a tub in which a sack has been placed and pour in boiling water enough to fill the tub almost to the top of the jars, taking care to pour the water around the edges of tub, not on the jars. Then cover the tub with a cover of boards tightly and place heavy rugs over all. Let stand over night. A dry cool place away from the light should be selected to store the fruit away.

A Suggestion.—Let a number of orchardists agree to keep correct accounts of the number of full grown trees of each variety in their orchard and the age of the trees, the number of barrels of fruit of each variety sold, the grade, where marketed and the net price obtained, with date or season of sale, and report annually for say five years. If to these reports the system of cultivation, spraying, etc., is appended, the information to the intending planter and the general orchardist will be of the utmost importance and value.—(R. W. Starr before Nova Scotia Fruit Growers' Association.

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* Extract from a paper read at a Women's Institute meeting.

Summer Pruning

"I HAVE sprayed my currants for the currant worm," said Mr. A. W. Peart, of Burlington, to a representative of The Canadian Horticulturist, who visited his place recently, "and am practicing thorough cultivation, which should be kept up until the fruit is almost ripe. This cultivation must cease when the fruit shakes off readily. Blackberries also must be well cultivated throughout the season.

"About the middle of July I shall do the summer pruning. Young canes are cut off so as to leave them three or four feet high, depending on the habit of growth and the sturdiness of the cane. This pruning makes the cane tree-like and strong to resist winds and storms. None of the laterals will be cut back until next March.

SUMMER PRUNING OF GRAPES.

"When pruning grapes in summer the clusters of the fruit must not be exposed too much to the sun, as that delays ripening. About the middle of July or perhaps later the ends of long shoots should be removed to throw the strength from the wood to the fruit, but there is an ideal medium which should be struck.

"As soon as the young grapes have set I intend to start spraying with Bordeaux mixture to try to prevent the rot which gives grape growers so much trouble. It is practically impossible to control rots, moulds and scab if the weather is damp and warm. However, I am going to give three or more applications of the Bordeaux."

The Strawberry Patch

"THE Williams strawberry," said Mr. Wm. Fisher, of Freeman, to The Horticulturist recently, "has been giving me the best returns each year. I usually have seven or eight acres in this crop and have set out Williams, Sample and Senator Dunlap this season. Strawberries should be set out as early in May as weather will permit. They should be thoroughly cultivated every week through the early part of the season. The hoe, too, should be used frequently to keep all weeds out of the rows. The blossoms should be clipped off the first season so that good strong plants may develop.

Mr. Sherrington's Berry Field.

This illustration represents the raspberry patch of Mr. A. E. Sherrington, who conducts the fruit experimental station at Walkerton. The principal variety grown is the Cuthbert. Mr. Sherrington considers it the best for his section for home or market. The berry bushes are used as fillers in his experimental apple orchard. The old apple orchard appears in the background.

"In my young orchard I always plant small fruit if the soil is suitable. This practice can be carried on until the fruit trees come into bearing. In raspberries I find the Marlboro and the Cuthbert give excellent satisfaction. The former comes in slightly earlier. They are both large berries of good quality suitable for shipping. The bushes, too, have sufficient wood to bear large quantities of fruit."

Methods With Raspberries

"THERE are two radically different methods of growing raspberries," said Mr. R. B. Whyte, of Ottawa, to The Horticulturist. "The one commonly used in western Ontario is to 'pinch in' the plant when it is about two feet high and make a bushy plant of it. In this way staking is not necessary. In the colder parts, like Ottawa and vicinity, where the plants have to be laid down during the winter for protection, I find it much better to allow them to grow without pinching them until they are about five feet high.

"Lateral branches should be cut off to within about six inches of the main cane so as to throw additional strength into the main cane and to prevent the lateral branches breaking off with the weight of the fruit. The bushes can be staked off. For a tall open bush like this it is possible to obtain larger and finer fruit, which possesses much finer flavor. I used to lose my crops when I tried the other method, but have never lost a crop since I have adopted this system."

It pays to correctly fertilize strawberries for the following reasons: It vastly increases the yield, it gives larger berries of better color and flavor and a firmer fruit. Firmness in the fruit enables it to be shipped long distances and arrive fresh.

Take pains. If you do that you will make a success of strawberry culture.

A Fine Fruit Exhibit

LINUS WOOLVERTON, GRIMSBY, ONT., SUPT. FRUIT EXPERIMENT STATIONS.

OUR Ontario fruit experiment stations will put up an exhibit at the Ontario Horticultural Exhibition in Toronto next November which will be of the greatest interest to fruit growers because of its educational character. For nine years these stations have been testing all known varieties of fruits. We have found many much lauded varieties to be worthless. These will be shown in a class by themselves, while the varieties which have proved profitable or otherwise worthy of cultivation will be shown and duly placarded. Work is already beginning in preparation by the putting up of tender fruits in glass bottles, of which several hundred have been distributed among the experimenters for the purpose.

The Effect of Example

GEO. VAIR, TORONTO.

DO not be discouraged by one failure to grow flowers, but try, try again. Your neighbor will seek to emulate you and thus spread this pleasing and refining influence.

On the street on which I live I did not have much opportunity to grow flowers, but I began to plant some creepers and added a few geraniums and other things in the small space at my disposal. The result was that my neighbors began to do likewise and have put me in the shade.

These neighbors began to take pleasure in gardening, and a more delightful scene could hardly be witnessed than that of a whole family, young and old, sitting outside in the summer evenings, often bragging about their different displays.

A perfect all round strawberry is about as hard to find as a perfect all round milk cow.

CORNER ROCKERIES IN CITIES

In attempting to add true beauty to the landscape or even to the small lot the tendency in recent years has been to maintain as nearly as possible a strict naturalness. There are, however, very many cases in which art and nature must be combined to give the desirable effect.

Large boulders and ledges are in themselves natural objects which add a charm to their surroundings. Loose rocks and cobbles on the other hand are unsightly rubbish. But even these objectionable smaller stones may be made use of by having them form the nucleus for clumps of shrubs. It is the larger shaggy ledges, however, that give the best effect.

Large boulders arranged along a steep embankment with no regular outline add a naturalness and beauty which can be obtained in no other way.

By combining plants and rocks even small level lawns may be rendered much more beautiful. Too frequently a corner lot is spoiled by "busy" people taking short cuts and making a hideous path across what otherwise would be a beautiful lawn. Many means of preventing the making of these unsightly paths have been tried. Fences are being discarded. Shrubs and trees are effective, but as a rule rockeries add more beauty and are just as efficient in preventing inroads of hurried pedestrians.

Large, water-worn limestone rocks produce the best effect. They are so rough and irregular that they are almost certain to present a natural appearance. By combining what artistic tendency is possessed by even an amateur landscape gardener with the inherent naturalness of the rocks themselves it is an easy matter to produce a very pleasing effect.

In building the rockery none but the best soil should be used, and it is important that it be well packed into every corner between the rocks. The choice of shrubs, plants and vines will depend on the climate and on the site, as well as on the size of the rockery.

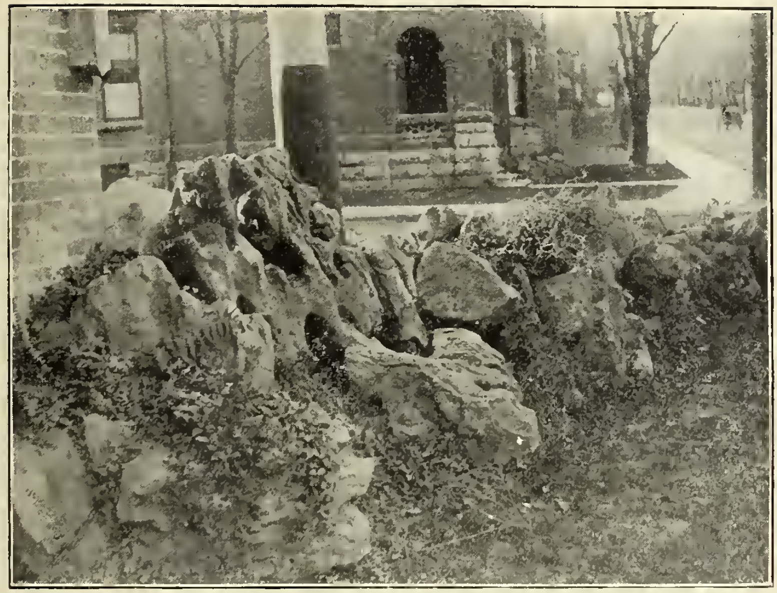
In Hamilton last year the City Improvement Society offered prizes for corner rockeries and many beautiful effects were produced. As an encouragement to amateurs in any line it might be stated that the first prize was won by Mr. C. D. Nash, who had had no previous experience in rockeries.

"My rockery," writes Mr. Nash to The Horticulturist, "consists of water-worn stones of all shapes and sizes. In erecting them no particular care was taken to make them in any way straight. This, of course, gives a better effect. The rockery is 16 feet long, 26 inches high, and 28 inches

The First Prize Rockery in a Hamilton Rockery Competition.

wide. After putting a layer of broken stones in the bottom for drainage I filled the spaces even with the top with earth composed of old sod and manure which had been standing for over a year. This was packed down well and allowed to stand for a couple of months. Before planting the flowers I loosened the earth to a depth of about six inches. I planted geraniums, coleuses and dracenas. For trailers I used creeping ivy, nasturtiums and periwinkle, while small pockets were filled with alyssum and trailing lobelia. I also added some single petunias later in the season. In planting the varieties were intermixed as much as possible."

Dr. D. G. Storms, who won the third prize, informs The Horticulturist that his orders to the builder were: "Put the stones together so that no one will suspect any design." "I realize," says Dr. Storms, "that nature abhors straight lines. My rockery was built on no other plan than that of nature, except that it was extended from the corner of the house to the angle formed by the two sidewalks. In building it the soil for the formation was loosened and thoroughly enriched with well-rotted manure. The stones were placed without order except to leave pockets here and there. The soil used was a mixture of old clay sod, well rotted chip dirt and cow manure, with some leaf mould.



The Rockery That Won Third Prize.

"I have endeavored to place in the rockery only those plants which are at home. I used hepatica, ferns and periwinkle. For bloom I depended on verbenas. My idea was not to make a flower bed, but simply an attractive and useful rockery."

Regarding the rockery of the Hamilton Cataract Power Co., which won fourth prize, Mr. Wm. A. Sweet says: "The rockery was made of mossy waterworn limestone rocks gathered from the side of the mountain. It is about 14 feet wide, 18 feet long, and three feet high, and runs from the corner of the building to the sidewalk. The space between the rocks was filled with equal parts of well mixed rotted manure, black loam and sand loam.

"Around the sides were planted some small rock ferns and wild flowers from the mountain, and nasturtiums. The top was well filled with various trailing and creeping plants, such as centrosema, cypress vine, portulaca and canary creeper. I also had some geraniums, fuchsias, cannas, asparagus and ivy geraniums. Some of these do not belong to rockery plants, but I put them in because it was too late in the season to get the more desirable kinds."

Ants on Peonies

DR. JAS. FLETCHER, OTTAWA, ONT.

My peonies last year were almost covered with ants and the plants in many cases were destroyed. I used everything I heard of but found no remedy. A friend told me that it was aphids and not ants which cause the trouble and that the ants ate the aphids. My roses too were attacked by some insect. The leaves curled up. I washed the roses once a day by spraying with cold water, and applied "slug shot," but it did no good. Is there a remedy?—(Mrs. Ezra Briggs, Walkerton, Ont.

Ants frequently cluster on the buds of peonies, but I have never observed any harm from their visits. They seem merely to eat the gummy secretion on the buds. I have never noticed aphids on peonies. For aphis on roses I think the easiest effectual remedy is to spray them with whale-oil soap, using one pound of soap in six gallons of warm water. Kerosene emulsion is made by dissolving one half pound of hard soap in one gallon of rain water by boiling. Then add two gallons of kerosene while still hot and churn briskly for five minutes. This should be diluted with nine times its measure of water when treating rose bushes attacked by plant lice.

With the 'Mums in July

GEO. HOLLIS, BRACONDALE, ONT.

THE early varieties of chrysanthemums planted in May must receive careful attention this month. The bench should be kept free from weeds and the surface of the soil loose to a depth of at least half an inch. If the soil is allowed to bake some parts of the bench will be too dry while others are too wet. Every endeavor should be made to get a vigorous and firm growth, for without that the flowers will not be good.

About the middle of July the addition of some manure water would be beneficial, but to some people the odor is objectionable. Arnott's horticultural manure has not this objectionable smell and gives first-class results.

The late varieties should be planted without delay. Both early and late kinds must be sprayed thoroughly and often, getting the water well under the foliage. If this is done the troublesome thrip will be prevented from working destruction. More plants are ruined by thrips than by any other insect. Thorough spraying with tobacco water once a week will keep the plants free from insect pests. If dwarf pot plants are wanted the cuttings should be rooted this month. Five or six plants can be put in a five-inch pot and with care they will make very nice plants. The strongest shoots of early varieties should be nipped back once more during July.

Chrysanthemums

"WHEN preparing the benches for chrysanthemums," says Mr. H. Neal, of Ingersoll, "I put two or three inches of well-rotted cow manure in the bottom and then about three inches of good soil on top of this. When the plants grow up and begin to show buds I pulverize a lot of cow manure and spread it all over the surface about an inch deep.

"This is better than using the liquid manure, because every time the plants are watered some food is made available to them. I aim to keep the plants growing steadily and never allow them to lop over. I prefer strings to stakes. My best paying varieties are Queen (white) and Col. Smith (pink) for mid-season, and Mrs. Germey Jones (cream) and Merry Christmas (white) for late season."

Some plants, as begonias, fuchsias, lilies, Chinese primroses and coleus, may be grown in an eastern window, in fact do better there than in too strong sunshine. Then there is the graceful palm and feathery fern for the room lighted by the northern window.—(Mrs. W. J. McLenahan, Appleby, Ont.

GROWING PANSIES

"WE grow a general stock of flowers," said Mr. P. Fogarty, Jr., of Fogarty & Sons, florists, Toronto, to a representative of The Horticulturist who visited their new greenhouse recently, "but we have made a specialty of pansies. We are going into carnation growing and have selected the Lawson (red), Glacier (white) and Morning Glory (pink) as the best varieties. At one time we used to give much attention to bedding plants, but since we have built a new greenhouse intend going into cut flowers and pot plants more extensively. Cyclamens and primulas make a nice display.

"Our pansies are grown from seed. The seed is planted in summer and produces strong, well grown plants before winter. They are covered in the autumn and in the spring they come on in good time. Last year we got new seed from an American seedsman to mix with our own so that we might obtain new varieties. Without such mixing the plants would soon deteriorate.

USES MANURE.

"The fertilizer that we use the most is stable manure," continued Mr. Fogarty, "but we have used commercial fertilizers also. The latter are good if they do not contain too much grease, which promotes fungous diseases. We have had very little trouble with insect pests. They can be kept down by regular fumigation. A ready sale is found for our plants in the local market, and more could be disposed of if we had them."

Dahlias Improved

E. F. COLLINS, TORONTO.

FOR many years the dahlia has been a favorite flower among the florists in England, and to-day it is found in almost every garden. The honor of improving this plant and producing new varieties with larger flowers belongs to the French and German gardeners. The glowing reports of grand displays brought back by the people of Great Britain who visited the continent caused the English gardeners to interest themselves in producing new varieties. That they succeeded is best evidenced by the fact that to-day they have hundreds of varieties of all shades and colors.

The introduction of the dahlia into England is ascribed to the Marchioness of Bute, who is reported to have brought the first specimen from Spain in 1798. At that time the dahlia was single. In a few years, however, some French enthusiasts had produced full double flowers in red, purple and pale yellow. By careful hybridization the striped and variegated varieties were produced from these until now we have what is known as the "Fancy Dahlia." The onward march toward perfection has been so marked that little more can be desired in the way of symmetry, doubleness or color.

The Lawson Carnation.—"There are four varieties of the Lawson carnation," said Mr. J. H. Dunlop to The Horticulturist recently, "the original Mrs. T. W. Lawson, the universally popular dark pink, and three sports, white, red, and variegated, each of which is similar to the original except their respective colors. The white is pure in color and large in size, the red a bright scarlet of a brighter shade than any commercial variety, and the variegated is delicately pencilled with cerise pink on a pure white ground, a very chaste flower."

Some plants like a southern exposure, the geranium for instance; others prefer the morning sun, some partial shade; others, as ferns, entire shade.—(Mrs. W. J. McLenahan, Appleby, Ont.

Large crops of strawberries are only grown on soils very rich naturally, or made so artificially.

THE CITY GARDEN*

A. H. EWING, WOODSTOCK, ONT.

NOT much can be done in the way of laying out city gardens, but there are ways of planting in order to get the greatest amount of beauty and interest out of them and there are trees and shrubs and plants that will give a greater amount of interest than many that are used. Every man is liable to have a hobby in the line of gardening, as in everything else, I suppose, and there seem to be fashions in gardening too, but I believe there is the greatest amount of satisfaction both for an amateur or professional gardener to be obtained out of the hardy herbaceous plants, bulbs and tubers.

A Beauty Spot in an Amateurs Garden in Perth

Another Walk in the Same Garden

The different species and varieties are in bloom from early spring to early winter; amongst them there is an endless variety of form and color; they are of very easy cultivation, will grow in almost any soil and require comparatively little attention. Perhaps it would not be amiss to name a dozen out of the hundreds to be found in the catalogues: Delphinium (larkspur), phlox, iris (Fleur-de-lis or flags), helianthus (sun flower), aquilegia (columbine), campanula, digitalis (foxglove), hollyhocks, ornamental poppies, tritoma (red hot poker).

I do not mean to say that this class of plants should altogether take the place of many others in common use, such as geraniums, cannas, stocks, phlox drummondi, etc. We can hardly get along without them, but I think that the hardy herbaceous plants should be made the main feature.

I am very glad to see that the geometrical and formal styles of bedding and gardening are losing favor and that the tendency is more and more to the natural, which is certainly more beautiful and also more restful to the tired brain of the present day business man or workman. If you go in for roses they should have a garden for themselves, but the situation and the soil will determine to a great extent whether you will have much success or not. They should be sheltered from strong winds, but not under trees; they like plenty of air and sunshine, though shade from the hot mid-day summer sun will not be a disadvantage. As to soil, I have always found that a stiff loam suits them best, and if the soil in your garden is very light some heavy clay loam mixed with it would be very beneficial. Before ordering roses for your garden find out from your neighbors the kinds that thrive best in your locality, also what kinds do best on tneir own roots and grafted on other stocks.

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* Extract from an address delivered before the Woodstock Horticultural Society. The Horticulturist will be pleased to receive copies of papers read at meetings of societies.

Where the owner of a garden is unable to do much work on it himself, flowering shrubs are very attractive and much pleasure can be obtained from them. There is a great variety, and their blooming season begins early and lasts till well on in the summer. I should like to mention a few. Of lilacs there are a great variety of colors and shades, some make low bushes others large shrubs, some are early and others late; of the syringa (properly Philadelphus or mock orange) there are several varieties, short and tall; berberis or barberry; pyrus Japonica (Japan Quince), white and scarlet; deutzia; weigelia, several beautiful varieties, no garden should be without one of these; exochorda (pearl bush); althaea (Rose of Sharon), sometimes winter killed; the well known Hydrangea Paniculata Grandiflora; spireas in great variety and beauty; viburnum (snow-ball), and rosa rugosa very pretty both in flower and fruit. Some of these ought to be in every garden.

The Verandah Box

E. MEPSTED, OTTAWA, ONT.

ONE of the most attractive features of summer decoration is the verandah box. We are beginning to find them on all our streets. If there is no other plant decoration on the lot the verandah box is still complete, and if there are many other decorations around it a finish is added to all.

Some people cannot afford to spend much on these boxes. They need not. They can easily get a plain box made the required length with plenty of depth and width—don't make them too small. Place them on the verandah and plant with nasturtium and petunias, single, of course. Add two or three German ivys and you have a cheap box. If you wish you can add a few geraniums and by midsummer the display is fine.

The plants need plenty of water when they are growing vigorously. On the shaded side of the house begonias and foliage plants, such as coleus, are suitable.

Advertise in The Canadian Horticulturist.

Tree Peonies at Ottawa

AMONG the many amateur gardeners which Ottawa can boast of none are more enthusiastic than the Hon. Frank R. Latchford. His display of tree peonies is a very striking feature of the Waverly street garden. Many of these were imported direct by himself from France and Japan. These beautiful flowers are usually considered tender in climates less severe than that of Ottawa so that this magnificent display requires some explanation.

Mr. Latchford attributes his success to his manner of protecting them. He uses no packing material of any sort, but each plant is covered by a wind and water proof box made of ordinary boards. He is firmly of the opinion that packing material, even of the best, induces mildew and decay, and dryness and protection from the wind are the essential features. His success with peonies, as well as tender roses, is an indication of the correctness of his theory.

The Horticulturist is now the peer of the American monthlies and ought to do much for horticulture in Canada.—(P. G. Keyes, Ottawa,

Eriobotrya Japonica—Japan Medlar

R. CAMERON, NIAGARA FALLS, ONT.

ERIOBOTRYA Japonica, the Loquat, Japan "plum" or Japan Medlar, is one of the most valuable fruits of the southern states. Blossoming in winter, the fruit ripens in early spring and brings fancy prices in any large city. It is frequently shipped to New York in strawberry boxes. This fruit has long been cultivated in the south, where it seldom attains a height of more than 15 feet, though in its wild state it forms a lofty tree.

Japan Medlar

The fruit is the size of a plum, bright yellow in color, and delicious taste. It is a most beautiful broad leaved evergreen, and is one of the finest ornamental plants to cultivate as a tub plant on the lawn, where it flowers and fruits during the summer. It is easily raised from seeds, and will winter well in any ordinary cellar.

It will grow readily from cuttings the same as the oleander, and makes a good mate for the latter. It does better if it gets a rest in the winter, and should be given very little water until the spring when it begins to grow. It may be kept in winter in a cool greenhouse, or in the cellar.

Floral Exhibitions

E. MEPSTED, OTTAWA.

ONE of the greatest incentives to amateur gardening is our horticultural society with its shows. It is natural for us to like to contest with others for supremacy, and in flowers and plants and vegetables it is particularly fascinating. But, when we enter these contests, we must learn to take defeat cheerfully. It is natural for us to think our own is the best, but few can look on their opponents' exhibits without prejudice. The judge as a rule will pick out the best. He has points of his own to go by, and although sometimes the decisions are close, and it seems as if he might have reversed his decision with equal justice, perhaps we did not notice our poor foliage, an old flower, or some short stems. When we see how close we were to the first or what an improved exhibit we have from last year we go home prepared to do better next year.

Starting Cucumbers

"CUCUMBERS started in hot beds dampened off badly," said Mr. H. R. Rowsome, of Burlington, to The Horticulturist, last month, " but there was practically no loss where they were started in the greenhouse. I start cucumbers in pots," continued Mr. Rowsome, " but plunge the pots so that less frequent watering is demanded. The plants should not be set out before June 1, because all frosts must be avoided. Cold winds are very harmful.

" My plants are set in rows, in furrows, four feet apart, and are three feet apart in the row. When started in pots and set out in the furrow they get no set back. If given frequent cultivation until the vines cover the ground a good crop of fruit is ensured."

In preparing soil for the hot bed see that the manure is well rotted or it will dry out. Rich leaf mould is the best soil.

PLANS FOR THE VEGETABLE GROWERS' CONVENTION

THE recently organized Ontario Vegetable Growers' Association is planning an energetic campaign for the summer and fall. In the near future the association is likely to be one of the strongest associations of the kind in the province.

A meeting of the executive committee was held in Toronto June 15, the officers present being Messrs. W. A. Emory, of Aldershot, president; Joseph Rush, of Humber Bay, vice-president; Geo. Syme, Jr., of Carlton West; W. Carter, of Dovercourt; John McKay, of Doncaster; R. Lankin, of Toronto; F. F. Reeves, of Humber Bay; A. MacMeans, of Brantford; John Atkin, of Sarnia; J. E. Terrill, of Picton, and the secretary, H. B. Cowan, of Toronto. It was explained by the secretary that the deputation which waited on the government in March and asked for a grant had met with a favorable reception, as the government had given the association a grant of $600. In addition to this the association was given a special grant of $200 to assist it in making an exhibit at the Ontario Horticultural Exhibition in Toronto next November.

After a little discussion it was decided to hold the first convention of the association on November 15 and 16 next at the time of the Ontario Horticultural Exhibition and to secure first-class men as speakers, not only from points in Ontario but from the United States as well. A rough outline of the program was prepared and the secretary was instructed to communicate with the parties mentioned to see if they would be willing to speak on the subjects assigned to them.

In the morning of the first day there will be a meeting of the officers of the association. In the afternoon the main subject for discussion will be "Growing Vegetables for Canning Purposes. Mr. W. C. McCalla, of St. Catharines, will be asked to speak on "The Cost of Production"; Mr. J. W. Hyatt, of West Lake, on "Cooperation in the Growing and Canning of Vegetables," and a representative of the Canadian Canners' Company on "The Canning of Vegetables from the Manufacturer's Standpoint."

At the Thursday morning session the main subject for discussion will be "Insect Pests in the Garden," when the speakers will include an authority from the United States; Mr. R. S. Brodie, of Montreal, and Prof. W. Lochhead, of Guelph Agricultural College. In the afternoon the subject will be "Growing Vegetables for Market Purposes." Prof. Zavitz, of Guelph, will be invited to speak on "Experiments in Growing Vegetables"; Mr. Brodie, of Montreal, on "Growing Vegetables under Glass," and Mr. J. L. Hilborn, of Leamington, on "Growing Vegetables for the Early Market. It was decided to leave plenty of time for a discussion of the various subjects.

After a brief discussion the secretary was authorized to communicate with Mr. G. A. Putnam, Superintendent of Farmers' Institutes, to see if he will arrange for the holding of a series of meetings some time during the latter part of September or the early part of October in the vegetable growing districts of Ontario, these meetings to be addressed by well known authorities on vegetable growing who will be in a position to assist in the formation of vegetable growers associations in the same manner that local fruit growers associations were formed last spring.

It was felt that the association should be thoroughly organized before the convention next November, and it was decided to send the following members of the executive to the cities mentioned, during August, with the object of forming local vegetable growers' associations:

Mr. Joseph Rush, to Cobourg, Belleville, Kingston, Brockville, Cornwall, Ottawa and Peterboro.

Mr. W. Carter, to Barrie, Orillia, Owen Sound, Guelph, Berlin and Stratford.

Mr. A. McMeans to Woodstock, Simcoe, Ingersoll, Galt and London.

Mr. F. F. Reeves to Niagara Falls, St. Catharines and Hamilton.

Mr. John Atkin to Chatham, St. Thomas, Windsor and Leamington.

The president of the Guelph Agricultural College will be requested to arrange for an exhibit of pressed weeds at the Ontario Horticultural Exhibition, the weeds to be properly named and accompanied by information regarding methods for their extermination.

Three hundred dollars was voted to the Ontario Horticultural Exhibition as the association's share of the expenses. Messrs. Rush, Syme and Reeves were appointed a committee to prepare a prize list. A second committee, composed of Messrs. Emory, Rush, Syme and Reeves was appointed to represent the association on the executive of the Ontario Horticultural Exhibition.

BURGUNDY MIXTURE—SODA BORDEAUX

W. T. MACOUN, C. E. F., OTTAWA.

THE use of washing soda instead of lime in the preparation of a mixture for potato rot has been advocated in Great Britain and Ireland for about five years, and the Burgundy mixture, as it is called, has been used very largely there for this purpose in preference to ordinary Bordeaux mixture. When freshly prepared its adhesive properties are greater than ordinary Bordeaux; it is not so liable to clog the sprayer; washing soda is more uniform in character than lime; it undergoes no change in composition when kept; in Canada, also, it is sometimes difficult for farmers to get fresh lime. It has been used very little in this country as yet.

A formula for the Burgundy mixture was published in my report for 1902. It has been tested at the Central Experimental farm, but the results so far both with fruit and potatoes have not been definite enough to determine its comparative value with Bordeaux mixture. We know of only one fruit grower in Ontario who has been using the Burgundy mixture for spraying apple trees for the prevention of apple rot, namely, Dr. Harkness, of Irena, and he has had excellent results, his McIntosh red apples being spotless. It has an advantage in that it does not discolor the fruit as much as the ordinary Bordeaux. Apparently its chief defect is in the fact that it loses its adhesive properties very rapidly after it has been made a few hours, and hence should be applied when it is fresh, when it will adhere better than Bordeaux.

The following results, taken from Leaflet 14 of the Department of Agriculture for Ireland, show that in the year 1900 the results from the use of Burgundy were better than those from Bordeaux. In 1901 and 1902 the yields were also greater.

RESULTS OF TRIALS, SHOWING YIELDS PER STATUTE ACRE, 1900, IN IRELAND.

	Name of Potato.					
	Dufferin.		Sutton's Flour Ball.		Beauty of Bute.	
	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.
Sprayed with Sulphate of Copper and Lime..	10	14	10	10	10	3
Sprayed with Sulphate of Copper and Washing Soda..........	12	0	11	11	11	13
Not sprayed...........	7	3	8	5	7	19

The following formula for the preparation of Burgundy mixture appears in the spraying calendar which was issued by Dr. Fletcher and the writer last spring:

BURGUNDY MIXTURE (SODA BORDEAUX) FOR POTATO BLIGHT AND ROT.

Copper sulphate (bluestone), 6 pounds.

Washing soda (carbonate of soda), 7½ pounds.

Water (1 barrel) 40 gallons.

Dissolve copper sulphate as for Bordeaux mixture. Dissolve 7½ pounds washing soda in four gallons water. Pour the copper sulphate solution into a barrel, half fill the barrel with water, then stir in the solution of washing soda slowly, stirring continuously, and finally fill the barrel with water. It is now ready for use. The soda Bordeaux adheres better to the foliage when freshly made than the ordinary Bordeaux mixture, but it deteriorates rapidly in this respect and must be used as soon as made. If left standing for 24 hours it will have lost nearly all of its adhesiveness.

The soda Bordeaux is not recommended in preference to the ordinary Bordeaux mixture, but where lime cannot be obtained it may be used with good results. Furthermore, on account of its freedom from gritty matter, there is less likelihood of the nozzles becoming clogged when it is used. As washing soda is considerably more expensive than lime this mixture costs more than the ordinary Bordeaux mixture. For fruit trees use four pounds copper sulphate and five pounds washing soda.

Vegetable Pests

"THE most effective preventive of mildew on lettuce is to grow it rapidly," said Mr. J. W. Rush of Humber Bay, to a representative of The Horticulturist. " Sulphur is liable to kill the plants.

" I have had considerable trouble with the maggot on my cabbage and onions. The best method is to pinch them between the finger and thumb. I have grown cabbage on the same ground for 28 years, and had club root only the last two years. I have moved the crop to other ground to try and get rid of it.

" Two to four acres of melons were grown at one time, but now I have only a few hills, as melons can be brought here from outside points more cheaply than they can be grown."

Vegetables Under Cotton

" I do not believe the growing of vegetables under cotton frames will ever be a success commercially," said Mr. W. T. Macoun, horticulturist at the Central Experimental Farm, Ottawa, to a representative of The Horticulturist recently, who visited the farm, " but it may prove a success for amateurs who would like to keep a garden in the city and are unable to do so through the destruction worked by cats, dogs and chickens.

" The frame we have at the farm cost $15. It is 62 x 15 feet and the wood will last for years. The cotton lasts two years and costs about $5 a year. This year we are growing cauliflower, radishes and beans. The idea of using the frames in growing these vegetables is to keep out the root maggot from the cauliflower and the radishes and to get the beans earlier in the season and have them more tender.

" Cauliflower, radishes, beans and lettuce have done the best. Early cauliflowers are usually a total failure outside the frame, but I have not found them so in the frame, except were the root maggot having got into the hot bed, comes out on the roots. Radishes also have been frequently a total failure when grown outside, but have succeeded in the frame. The warm sandy soil around Ottawa is suited to the maggot."

A Big Crop of Celery.—" I expect to grow about 50,000 celery plants this season," said Mr. H. R. Rowsome to The Horticulturist a couple of weeks ago. "Paris Golden and Evans' Triumph are two good standard varieties, but Bruce's Hamilton Red also give large returns. Swamp muck and black sand are best adapted to the growing of celery, while it will not grow on land with a clay subsoil."

Tomato Growing

"I HAVE set out about nine acres of tomatoes," said Mr. Arthur Peer, of Freeman, to a representative of The Horticulturist who visited his place last month, "and none of the vines have been destroyed by frost. On our soil, which is a clay loam, we get medium vines and good fruit, and I find that rows five feet apart and four feet apart in the row give the best returns."

"For an early crop," continued Mr. Peer, "the Earliana is exclusively grown, while Stone, Matchless and Favorite are good for a later crop. The Stone is perhaps best if the season is long. I grow chiefly for the canning factory, but ship some of the early varieties to Toronto and Montreal.

"Many of the growers in this district belong to the Hamilton Tomato Growers' Association. I had my crop contracted for before the agitation for a higher price was begun, but believe that growers should have 30 cents per bushel for their crop.

"In an unfavorable season, when the crop is not good, 25 cents per bushel does not pay the expenses connected with growing them. If the canners combine would give 30 cents the private factories would do the same."

A Frame for Tomatoes

A HANDY method of tying up tomato vines is practised by Mr. R. B. Whyte, the well known amateur fruit grower in Ottawa. "For my tomato vines," said Mr. Whyte to The Horticulturist, "I make a frame three feet wide by four and a half feet high and tie the vines to the frame. Stakes two and a half inches wide and two inches thick are used for uprights, and laths for cross pieces. The stakes are pointed and driven into the ground.

"One of the best features of these frames is that they can be removed in the fall and stored and used again whenever desired. The benefit of this system is that it lets the sun reach the vines, thus ripening the fruit earlier and also preventing destruction by rot."

"The crown gall is a bad pest which is new in our nurseries," said Mr. A. N. Brown, of Delaware, when talking to a Horticulturist representative. "We cannot discover its cause or how it can be successfully fought. It is very destructive. Fumigation and other remedies which have been tried are no use."

The Beautiful Effect of a Clump of Spiræa Van Houttii.

A clump of Spiræa Van Houttii, one of the most charming shrubs of the Spiræa family, is here shown as reproduced from a photograph furnished The Horticulturist by Mr. Roderick Cameron, of Niagara Falls South. It is rather dwarf in habit, and the flowers are of short duration, but when in full bloom its massive white flowers present a very pleasing appearance. Its foliage, too, is beautiful. It is hardy only in the warmer parts of Ontario.

Borers Injuring Trees

PROF. H. L. HUTT, ONT. AGRI. COLLEGE,

I have been planting trees and find occasionally that insects and dry rot get under the bark, and sometimes have almost girdled the tree, so that when I cut away the decayed part round to the good bark it left a great patch of wood bare. I have covered this with soft bees-wax, as the only thing I could think of.—(R. Holmes, Toronto, Ont.

I am inclined to believe that the trouble with your newly transplanted trees is caused by borers. There are several kinds of these, the two most common being the flat headed and the round headed borers. The eggs from which these hatch are usually laid in the southwest side of the tree near the ground, and as soon as they hatch the young larvae eat through the bark and feed just beneath the bark for one or two seasons, sometimes entirely girdling the tree. When fully mature they bore deeply into the wood and pass the pupa or resting state, from which they emerge in the perfect form as beetles.

Where one has only a few trees to protect, a good plan is to encase the lower portion of the trunk of the tree with fine wire netting, which prevents the beetles depositing their eggs. Another plan used in orchards where there are many trees to be protected, is to wash the trunks of the trees with soft soap, to which a sufficient quantity of crude carbolic acid has been added to give it a strong smell and make it repulsive to beetles. This should be applied the latter part of May or in early June, at intervals of two weeks, at which time the beetles are depositing their eggs. This, of course, is a preventive measure.

If the borers have already gained entrance to the tree, the only plan is to cut them out wherever dead bark indicates their presence, and it is well to cover the injured part with a coating of heavy lead paint. It is not wise to use tar or any black substance of that nature about the trunk of the tree, as it absorbs so much heat as sometimes to seriously injure the tree.

One Method of Growing Celery

"PARIS Golden," said Mr. Geo. Benner, of Burlington, to The Horticulturist in a recent interview, " is the celery commonly grown in this section. I start early celery in the greenhouse about February 15 and transplant it into flats. About May 15 or May 20 the plants are set out and the crop is ready for use about July 12.

" I get a better crop from rows than from solid beds. I use level culture and get just as good a crop with less labor than is necessary when planting is done in trenches. Then I blanch with boards instead of with dirt. There is no trench to dig, and no piling of dirt around the plant and pulling it away again. With a 10-inch board on each side, wire hooks to hold them together and some dirt along the bottoms to keep out the light the blanching is done in about 10 days.

" Compost is the best fertilizer for celery. I put it on in the fall and then do not need to plow in the spring. The ground must be cultivated frequently and not allowed to get solid."

Bees in the Orchard

" In fruit plantations," according to Mr. H. R. Rowsome, of Burlington, " bees do not have very much to do with fertilization. Cold, long continued rains wash the pollen out, thus preventing fertilization.

" If cold wet weather comes after the fruit has set a great percentage of the fruit often falls. This is especially noticeable with cherries. The stems rot off about the middle, letting the fruit drop. With currants, stems and all fall. In some seasons as high as 50 per cent. of the crop is lost from this cause."

If mushrooms were sufficiently brought before the public in a city like Toronto they should find a ready sale.—(Percy Casborn, Deseronto, Ont.

The Canadian Horticulturist

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A GOOD START MADE.

The recently formed Ontario Vegetable Growers' Association promises to be of great value to the vegetable growers of the province. The wonder is that such an association was not formed long ago and that there are not more similar organizations in the other provinces of Canada and in the states of the Union. The steps the association has taken to increase its membership and strength by forming local associations throughout the province give us reason to believe that it will ultimately become one of the most representative bodies of the kind in Ontario.

The idea that once prevailed that any person could grow vegetables is fast disappearing. As in fruit growing the increasing number of insect and other pests is fast driving the lazy and ignorant vegetable grower out of business. It is becoming recognized that if vegetables are to be grown successfully the most improved methods of culture must be practised. In making these methods known the Ontario Vegetable Growers' Association should play a prominent and valuable part.

A LARGE SHOW PROMISED.

There are a number of reasons to believe that the second Provincial, Fruit, Flower, Vegetable and Honey Show, or the Ontario Horticultural Exhibition, as it is now proposed to call it, will be a much greater success this year than last. The fact that Massey Hall has been secured for the purposes of the exhibition, for the second full week in November, will make it possible to display the exhibits to much better advantage and should add materially to the attendance. The inclusion of a vegetable exhibit and the holding of an additional convention will also tend to increase the interest in the show.

Last year the management was handicapped by unsuitable buildings, lack of experience in the holding of a joint exhibition and by ignorance on the part of the public in regard to the real nature of the show. The success achieved under these circumstances was encouraging and is bearing fruit this year, as firms and people who refused their assistance last fall are already showing an interest in this year's exhibition. These exhibitions promise to become an annual event of great importance.

The Horticulturist frequently receives letters from its readers, when renewing their subscriptions, stating that they have taken this magazine regularly ever since it was first established twenty-seven years ago. This speaks well for The Horticulturist and indicates the important part it has played in the horticultural affairs of the country for over a quarter of a century. We would greatly like to introduce some of these old subscribers to our thousands of new readers, and if they will be kind enough to send us their photographs it will be a pleasure to publish them. Let us hear from you, our old standbys.

Fruit growers are waiting patiently to hear Hon. Sydney Fisher's verdict in regard to the Dominion fruit conference he has been asked to call. Beyond informing the delegation that waited on him that he was favorably disposed to the idea nothing has been heard from him since. It is about time arrangements for the convention were being made, and fruit growers would like to know what the plans of the Dominion Department of Agriculture are.

Will not our readers help us increase our circulation until it reaches the 8,000 mark? If each of our readers were to induce only one of their friends to subscribe, even if only for the balance of the year, they would be doing their part nobly and the mark aimed at would be much more than passed. Our readers can be of great assistance in this way if they will try and can also help by buying from our advertisers. A little help from each means a great deal of help from all.

The main prize of five dollars, offered in each issue of The Horticulturist to the readers who purchase goods to the greatest value from advertisers in that issue, was won recently by Mr.

E. M. Smith, of Winona, who purchased goods to the amount of $726.95 from the Spramotor Company, of London, Ont. The Spramotor Company has informed The Horticulturist that Mr. Smith, when ordering these goods, notified them that he saw their advertisement in The Horticulturist. How is this for proof of the value of The Horticulturist as an advertising medium ?

Even the war and other troubles of Russia did not prevent Eurene Joseph Roebuck, 47 Pokroosky street, City of Rostaff on the Don, Russia, from renewing his subscription in January to The Horticulturist. Truly the circle of influence of this magazine is a wide one.

How to Pack Early Apples

(Continued from page 248.)

The St. Lawrence, last year, was particularly fine in Quebec, but a great many of them were handled at a loss, simply because shippers did not know the best place to market them. Never ship St. Lawrence to the Old Country markets, as for some reason British buyers do not want them and they always realize a poor price. One reason for this is they are often allowed to become overripe before packing and land in poor condition. Another reason is that the people over there seem to want an apple to please the eye rather than to tickle the palate; else why should they prefer the Alexander to the St. Lawrence, or the Ben Davis to the Spy.

The best and in fact the only market for the St. Lawrence is Winnipeg and the west. Western buyers will handle all we can send them. One of the buyers in our district shipped a car of St. Lawrence to Liverpool, at the same time shipping one to Winnipeg. The stock was equally good in each, and was put up by the same gang of packers. While the one shipped to Winnipeg realized $2.25 net, the one sent to Liverpool only netted 55 cents.

For the Winnipeg market the barrel is the best package, although if the No. 1 were put up in boxes the returns should justify the extra trouble. Pick your St. Lawrence as soon as well colored; do not allow them to become too ripe ; grade them carefully, and keep out the culls.

The best paying apple in the province of Quebec is the Fameuse. Although it is not really an early variety, I think you will agree with me that the Fameuse is the best apple we can raise in this province when properly handled. There is no apple raised on the continent in which there is so much money lost every year by poor handling. Being tender and easily bruised it shows rough treatment more than any other variety. This is another apple which I contend should always be packed in boxes when No. 1. You cannot pack them in barrels to ship any distance and have them tight when they arrive at their destination without practically ruining about one-third of the apples in the barrel. Few shippers would recognize their apples one week after packing if they were to see them. No apple looks as badly as a bruised barrel of Fameuse two weeks after packing.

The loss will be lessened considerably if the apples are properly packed, but how many of our farmers can we get to pack their Fameuse and have them tight without bruising them? I inspected two cars of Fameuse last fall just as they were going on board the steamer for Glasgow. One car had been packed by Mr. G. D. Edwards, of Covery Hill, the other by another shipper near Montreal. That packed by Mr. Edwards, notwithstanding the fact that they had been drawn ten miles over one of the roughest roads in our county, were practically all tight, without being overpressed. The other lot were 75 per cent slack, and 50 per cent badly so. I think the party shipping this lot failed to rack his barrels thoroughly.

Glasgow is the best foreign market for our Fameuse, but Winnipeg is the best market to ship to. They want our Fameuse there, and last year were unable to obtain all they wanted. About 20 cars were shipped there from Hemmingford, and the shippers made money on them. They always bring about one dollar a barrel more than Ontario Snows and I believe that from this out dealers will be able to handle all surplus stock.

Our local markets also take quantities of Fameuse at good prices. A great many growers make the mistake of selling their Fameuse before November 1. Look at the result last year. On November 1, Fameuse sold in Montreal for $1 to $1.25—later they were worth $3 to $4. It would have cost about 20 cents per barrel to have put the apples in cold storage. Look at the profit there would have been had this been done. Only put in No. 1 stock, as wind falls or scabby apples would be practically worthless at this season.

Three or four years ago we thought we had too many early apples. Our local markets were glutted with them every fall, they sold for ruinously low prices, and farmers became discouraged. Some of them even cut down their orchards. This is all changed. Since our western market has become such a good one for our early apples and exporters have found that they can be exported with profit there is no glut in our market.

If our growers would only attend to their orchards properly, cultivating, manuring, spraying and pruning them, the early apples I have mentioned, with the addition of one or two others, such as McIntosh Red and Milwaukee, would prove fully as profitable as those in Ontario. With all our experimenting we have failed to find a satisfactory winter apple for Quebec, and until we do let us stick to our early varieties.

One of the most important problems before the average small fruit grower is that of the introduction of the power sprayer for use either in a cooperative way or by parties who are prepared to undertake the work by contract. The large grower can afford one for his own use.—(Joseph Tweedle, Fruitland, Ont.)

TRADE NOTES FOR PROFESSIONAL FLORISTS

The past month was a busy one for the professional florists in Canada's leading cities, as trade was brisk, the demand being steady and the prices realized profitable. Now that The Canadian Florist has given up the ghost The Canadian Horticulturist, being the only paper in Canada through which the professional florists may expect to be able to keep in touch with each other, has collected a few chatty letters for the trade.

Montreal Notes

The bedding trade is practically ended for this season. It has been the best season for some years for quantity sold and prices obtained. Most of the florists report being cleaned out. Geraniums were the leading plants, especially scarlet, A. Ricard being the favorite. S. A. Nutt was a good second, whilst La Favorite (white), Beautie de Pontevin (salmon) and J. Viaud (pink) all sold. Good plants in four-inch pots brought $1.50 per dozen without even a murmur. Petunias had the next best call, and deservedly so, either for hanging baskets, window boxes, or for bedding. Other staple varieties of bedding plants sold equally well. Although bedding plants are very remunerative we are all glad to see the last of them so as to give us a chance to clean out the houses. We are now busy planting roses, 'mums, etc. Trade has been brisk lately, weddings and funeral orders taking the lead. Roses and carnations are in steady supply, but the hot weather is injuring them slightly. Hardy flowers are coming in in quantity now. Valley is over, but while it lasted there was a great demand for it. Peonies are coming in in great quantities and of extra fine quality and sell on sight. A few of the new Japanese varieties exhibited before the Gardeners' and Florists' Club were superb.—(Geo. Robinson.

A Newsy Letter from London

The season when store trade is any considerable feature in the general business is past, wedding and funeral orders being the only ones that are being executed. In the greenhouses we are just between two rushes. The bedding plant trade is about finished, a few belated window boxes, vases and baskets are all that are called for. The coming rushes are rose and carnation, and chrysanthemum planting and getting general stocks ready for the fall trade.

The bedding season has been an extra brisk one, and all good plants—especially geraniums—have sold out. There are still quite a few on the market, but these are the second or third rate stock, being brought in by the small grower who grows or tries to grow everything in extremely limited space.

In London, in geraniums, S. A. Nutt is the reigning favorite, but in Guelph a local man told me recently that scarlets were the only sellers. We can dispose of quite a few good scarlets here, also a few pink and white, but 90 per cent. of the demand is for crimson. Coleus, Verchaffeltii, Golden Bedder and Chicago Bedder are all popular. Lots of people want the big leaved, coarse growing kinds, but it won't do to encourage this demand, as these varieties seldom or never stand the sun outside. A few cannas, say half a dozen different kinds, a couple of crimsons, a yellow, Madam Crozy, a spotted variety, and a good dark foliaged variety, are all the market demand. Caladium Esculentum, in limited quantities for damp situations, a few heliotrope, for lovers of the old fashioned flowers, a batch of alternanthera, cordyline and mesembryanthemum for an occasional formal bed, a big lot of vinca variegata for a trailing plant, and piles of the old German ivy for the same purpose will about cover the principal lines of the bedding trade here. To all this there is but one string, the same that is attached to every line in floriculture: the plants must all be of the very best quality. Buyers will willingly stick any old scrags they may have had in the house all winter into their beds and boxes and enthuse on the beautiful plants, but they invariably fail to become enthusiastic on anything but the very best when they visit a greenhouse, and if this is not present, womanlike, they have 40,000 excuses for not taking what you have got. If you have extra quality stuff they will take it even at double prices.

Insects and fungous diseases are troublesome as ever. An encyclopedia would be necessary to tell all the troubles they develop. Growers are rapidly getting the plants into the benches. The commercial varieties are looking well. The list of those grown for this purpose seems to be smaller than ever, notwithstanding the immense number of varieties introduced each year. Gammage & Sons will have eight houses devoted to chrysanthemums this year, seven to commercials and one to exhibition blooms. The big house devoted to the latter is in charge of Roy Winslow, the medalist of the Guelph Agricultural College, who has got his chemical laboratory in working order and promises us something extra. He certainly has got them moving—but more of this later.

What we want to hear a lot about through The Canadian Horticulturist is the coming Canadian Horticultural Association convention at Montreal. I hope, Mr. Editor, you will persuade all your readers possible to take in the old city during the meeting of that body. It is not by any means necessary to be a florist or a gardener to enjoy a couple of days with the craft in old Montreal in August. Any horticulturist will find there is plenty to interest him in his own line down there and lots to see besides Mount Royal. In conclusion I would say that it gives me much pleasure to send these few notes to The Canadian Horticulturist, and sincerely hope it will be successful in its efforts to secure the interest and patronage of the professional floriculturists of Canada.—(Fred. Bennett.

Toronto Trade Notes

"Trade has been brisk," reports Mr. H. G. Dillemuth, of J. H. Dunlop's retail establishment on King street. "So far it has been better than last year. American Beauty roses are still of fine quality and almost up to mid-winter stock. The Victoria is coming in with three-foot stem and large heavily petalled flowers Madam Chataney has become a favorite pink rose. It holds its quality and color well and is likely to displace Bridesmaid to a considerable extent, especially in the warmer weather. The latter already shows smaller flowers and has suffered considerably from mildew.

"Peonies are now the staple flower. More attention is being paid to these each season. Poor varieties are being weeded out and better ones added. This year finds a greater acreage of them grown than ever. The first lot of outdoor sweet peas have arrived. Lilium is expected in a few days. There is still an abundance of Longiflorum and Aratum. As a result of the Governor-General's visit and the usual host of June weddings trade has been extra brisk during the past month."

TRADE BETTER THAN USUAL.

"Trade has been excellent and prices better than usual," reports Mr. T. Manton. "Geraniums have brought higher prices than in other years, and the stock is cleaned out. Most bedding stock sold well. Ordinary box stock is always cheap in Toronto. Recent arrivals of roses are good for this season of the year. Kaiserin August Victoria is an exceptionally popular white variety. Peonies are of good quality. Many buds form, but late frosts so injure them that they never open. The tender European varieties are most easily affected by frosts. The demand for these flowers is greater than ever. Carnations are cheap and also in great demand."

Ottawa Florists Sold Out

Spring business is over and it has been brisk. There has been a much greater demand for all lines than previously. The demand for veranda and window boxes has doubled, and the demand for hanging baskets was increased. Geraniums were wanted by every one, and in a majority of cases scarlet, and though there was a larger stock than ever yet there was not enough to go round. This may be accounted for to a certain extent, by the demand for boxes, for the success of these depends largely on geraniums, an indispensable article in making them attractive. When there is a large demand for these and vases it is very profitable to have lots of Cannas, Coleuses, Irisenes, Senecio and German Ivy, well grown in 4-inch pots, as they then cover lots of space, and also have some early tuberous rooted begonias in flower, a fine thing to mix in among the geraniums and foliage. Also don't forget now to look out for a large stock of dracaenas to grow on for next year's use, as large fine plants add greatly.

All are now busy planting roses; the stock is in good shape. C. Scrim has two houses planted with young carnations, Lawson and White Lawson, and they are good plants out of 4-inch pots. The outside plants had too much rain early in the season that gave them a yellow look, but are now starting off in great shape. Trade has been very good and flowers fairly plentiful. Peonies have sold well. The backward season obliged the horticultural society to postpone its rose show from last week until this week. Our public parks and the beautiful driveway are in grand shape; flower beds all planted and grass and shrubs looking fine, and the Government Improvement Commission still going ahead. That $60,000 a year is making Ottawa a really beautiful city.

Canadian Horticultural Convention

The eighth annual convention of the Canadian Horticultural Association will be held this year in Montreal (Natural History Hall), August 8-11. It promises to be the most instructive and enjoyable meeting the association has yet held, not only because of the excellent program that has been prepared, but because of the many beautiful gardens, parks and greenhouses that will be visited. Montreal excels any other city in Canada in this line on account of the large number of wealthy gentlemen's residences located there, many of which are kept up in first-class style. Members of the association will be guests of the city of Montreal August 10, and of the Montreal Gardeners' and Florists Club on August 11, so that there will be no lack of opportunity to see all the "lions."

The association takes in "any person interested in the advancement of horticulture on the recommendation of three members in good standing" (the latter part of this rule is more often neglected than observed) on payment of $2 as membership fee.

In view of the "extra good time" members will have in a place like Montreal it is expected that many horticulturists of various special proclivities, and those who help to run the horticultural societies through the country, will attend. The railways are giving a special rate on the certificate plan, that is: Buy a full rate first-class one-way ticket to Montreal from your station of departure and obtain at the same time a certificate on the standard form that you have done so. On arrival at the convention hall hand this certificate to the secretary of the association for him to fill in and sign. The Eastern Passenger Association will have an agent at the convention hall to revise all certificates for which a charge of 25 cents each is made. On returning, if there are 50 members or more who hold certificates (and it is probable there will be), on presentation of certificate to the ticket agent at the Montreal station a ticket to starting point will be given to the member on payment of one-third of one way first class fare. If there are less than 50 certificates two-thirds of one way first-class fare will be charged.

As to hotel or room accommodation at Montreal there is any amount of it at prices to suit any purse, and the reception committee of the Montreal Gardeners' and Florists' Club will endeavor to place everybody in comfortable quarters. The Welland Hotel will be the headquarters of the association. Programs and any other information may be obtained from the secretary, Mr. A. H. Ewing, Woodstock, Ont.

OUR SPECIAL CROP REPORTS

The special reports received by The Horticulturist from its correspondents in the leading fruit sections of Ontario indicate that the total fruit crop of the province this year will not be as large as promised earlier in the season. The peach crop will not be more than a medium one. Small fruits will be about a full crop. It is too early to predict what the total apple crop of the province will be, but the reports received by The Horticulturist indicate that the total yield of the province will be above an average crop.

The rest plum trees had last year, after the heavy yield in 1903, promises to result in another heavy crop this year. Several reports received by The Horticulturist are to the effect that some varieties will bear lightly, but these reports are the exception rather than the rule. Conflicting reports have come to hand regarding the outlook for pears, but the prospect is that the total crop will be a medium one.

A FAIR APPLE CROP.

In the Lake Erie district apples will not be better than an average crop. Bloom was abundant, but wet weather prevented the fruit from setting. In Essex county some winter varieties promise a full crop. In the Niagara district the same conditions exist, but the prospects are better in the Winona district than in Welland county. Reports from Winona and Stoney Creek state that apples are a full crop. The Lake Huron section reports are unfavorable and indicate that there is likely to be a light crop of several varieties, although winter apples are promising in some localities. Georgian Bay growers, however, anticipate that early, fall and winter varieties will be a medium to full crop. Pewaukee, Ben Davis, Spy and Russet are reported to show excellent promise.

In central Ontario reports vary. In the county of Wellington one report says the crop will be only 25 per cent. of last year's. Other parts give Spy and Alexander a full crop. On the whole, reports from this district show a falling off from last year's yield. In the Burlington section the production will be light to medium. Along Lake Ontario the prospects are the most encouraging east of Toronto. York county promises a light to medium crop, while in Northumberland indications point to a full crop of the winter varieties. The Ottawa Valley promises a medium to full crop. In the northern section not many apples are grown, but Algoma, Victoria and Peterboro each promise a medium to full crop. Reports from Nova Scotia and Prince Edward Island state that a full crop is promised.

PEAR SECTIONS GIVE FAVORABLE REPORTS.

Pears in the Lake Erie district are very promising. Late varieties are reported as being a medium to full crop. In the Niagara peninsula both early and late varieties are likely to be a good yield in most localities. Many reports state there will be a full crop. In the important Winona section, however, the crop will not be large. Along Lake Huron the crop will be light. In Georgian Bay district the pear crop is heavy wherever the trees survived the hardships of the past two winters. One or two reports say the blossoms were numerous, but late frosts destroyed them. In Central Ontario the crop will be light. Some reports give Keiffer pears medium to full crop. Burlington section promises a light crop.

HEAVY PLUM CROP.

The section along Lake Erie promises a medium to full crop, many sections reporting the trees heavily laden. In the Niagara district reports state a heavy crop is expected, but some varieties in the Winona district will be light. The Lake Huron and Georgian Bay districts report a full crop, though one report says plums will be as scarce as last year. Reports from central Ontario are sanguine of a heavy yield. Burlington and Lake Ontario crops vary from medium to full.

PROSPECTS FOR CHERRIES.

The cherry crop will be light in the Lake Erie district. In the Niagara peninsula the yield is likely to be good, but rot has set in. Lake Huron reports say the cherry crop is light, while Georgian Bay reports a medium to full crop. Conflicting reports come from central Ontario, but a light to medium yield is expected. Burlington growers expect a full crop. Along Lake Ontario growers anticipate a medium to full crop.

PEACHES AND GRAPES AN AVERAGE CROP.

Peaches and grapes are reported as being a light to medium crop in the counties along Lake Erie. The Niagara growers are counting on a medium to full crop of both. The total acreage of peaches is less than it has been for some years.

ABUNDANCE OF SMALL FRUITS.

The small fruits promise a good crop in the Lake Erie district. In the Niagara peninsula the reports favor a medium to full crop. In some sections the raspberries were winter killed. Wherever grown the small fruit promise to be a fair to heavy crop.

Attractive Packages

In a report issued by the Department of Trade and Commerce, Ottawa, under date of June 19, Mr. J. B. Jackson, Leeds, England, has the following to say about apples from Tasmania and Australia :

"Australian and Tasmania apples are arriving in large quantities. These apples are shipped in a nice sized box holding about 40 pounds of fruit, and are bringing wholesale to-day from $3 to $4.15 per box. The packing and grading is excellent. Each apple is rolled in tissue paper and all interstices in the box filled therewith.

"I have seen no apples imported into England that can in any way approach these apples, either as to packing or appearance. They come out of the box without the least sign of bruise or discoloration, and in as perfect condition as when picked from the tree. The best varieties sent are very fine in flavor, but do not excel the best Canadians as we find them in the orchards in Canada.

"The boxes are well stencilled 'Australian' or 'Tasmanian,' together with the initials of the grower, and the place where grown. Within the box a neat showy card the full size of the box is found, printed in colors, stating where grown, the variety, and a guarantee that they have been packed and graded according to government regulations, together with the address of the grower and shipper. In every respect they are well packed, neat and attractive packages.

"These apples sell readily retail from 8 to 12 cents per pound. For the finest 'Canadian dessert apples' packed in boxes in this attractive form there should be a ready sale at prices almost double what the same apples bring in barrels."

Items of Interest

A Fruit Growers' Co-operative Association was formed at Cowal recently. The officers elected were: Pres., R. J. Hine, Dutton; vice-pres., John Lyons, Wallacetown; sec., Robert Campbell, Cowal.

The new prize lists for the Toronto Exhibition are out. The secretary, Dr. Orr, promises that this year's show will eclipse all former attempts. The first entries have already been received. This year the cash prizes are larger than ever before.

The Ontario Agricultural College calendar for 1905-1906 is a neat booklet and gives a careful, comprehensive outline of the different courses. Numerous illustrations of college scenes and students at work in the different departments add to its make-up and efficiency. The horticultural department is well equipped. The calendar contains an outline of the courses, terms of admission, etc.

In the report issued by the Department of Trade and Commerce, Ottawa, under date of June 19, Mr. P. B. Ball, of Birmingham, England, speaks favorably of the chances for Canadian apple growers making money by exporting cider apples—or better, the manufactured product.

Berry Boxes Must Be Full Size

In 1901 "an act respecting the packing and sale of certain staple commodities" designated weights and measures to be used in handling these commodities. Section 5 dealt particularly with fruit packages. Boxes were to contain specified quantities, and every box manufactured or offered for sale was to be plainly marked on the side with the word "short" if it did not hold that quantity when level full. The small boxes should hold at least two-fifths or four-fifths of a quart, while baskets may be two and two-fifths quarts, six and two-thirds quarts, 11 quarts and 15 quarts or more, as nearly as practicable.

The penalty for violation of this act is a fine of not less than 25 cents for each basket or box sold or offered for sale in contravention of this section.

This law has not been fully enforced. Recently, as a result of representations made to the Dominion Department of Agriculture by fruit growers and by the box and basket manufacturers who have been making full sized packages, a notice has been issued that special care is going to be taken to see that the law is complied with in the future.

An Illustrated Lecture

The Hamilton Horticultural Society is fortunate in having a president who is as interested and enthusiastic in the growing of flowers as is Mr. J. O. McCulloch. At a recent meeting of the society Mr. McCulloch gave an interesting lecture. "The plants that I have grown" was the theme of the address, which was illustrated by stereopticon views of the plants and flowers discussed, all of which are grown in the lecturer's own gardens. The audience were carried through a descriptive succession of bloom of the seasons, spring, summer and autumn.

Some fine views were shown, among which was one of the red-hot poker, or torch plant, of the genus kniphofia, which plant makes a splendid show even upon canvas. Mr. McCulloch referred to this plant as being a native of Africa, and not quite hardy here, but one that will amply repay the trouble of protecting or

WE wish to thank our many customers for a spring business much beyond our anticipations.

Be sure you are on our mailing list for our Fall Catalogue of Bulbs, Ornamental Shrubs, Hardy Perennials, etc.

THE WEBSTER FLORAL COMPANY, LIMITED
HAMILTON, CANADA.

storing over winter. It is one of the most striking plants under cultivation, sending up from a dense mass of sword shaped leaves several tall scapes, each surmounted by a pyramidal poker, from 8 to 10 inches long, and bearing about 100 drooping flowers of a fierce, fiery red color, hence its name. Details of the cultivation of each flower shown and discussed were given, and the audience listened to a very instructive and interesting discourse.

A Talk on Insect Pests

The Toronto Horticultural Society at its June meeting had the pleasure of entertaining Dr. Fletcher, entomologist, from the Experimental Farm, Ottawa, who delivered a lecture on "Insect pests and how to exterminate them," which was illustrated by stereopticon views. The society made the doctor's visit not only pleasant for himself but to all, as fine vocal talent was engaged which made the evening pass very pleasantly. The society invite their friends to join with them on their annual excursion to Guelph July 5th, leaving Toronto at 9.30 a. m.: tickets $1.00 and return.—(H. R. Frankland, President.

A Change in Officers

At a meeting of the directors of the Deseronto Horticultural Society held recently, Mr. D. McClew was appointed secretary and treasurer to succeed the late Mr. R. W. Lloyd. Mr. F. B. Gayford was unanimously elected president in place of Mr. D. McClew. A flower show is being planned for the early fall.

Prizes are to be offered later for the best kept grounds of members of the society, and judging from the improved appearances of several of the surroundings of the homes of members, many are preparing for the competition. This year there will be likely some changes made in the classification of this competition.

Instructive Meetings

The Ottawa Horticultural Society held another of its interesting and well known meetings June 20, when Dr. Fletcher, of the Experimental Farm, gave an address on "What plants do." The floral exhibitions at this meeting were of the usual high standing. On July 25 this society will listen to an address by the Hon. Frank R. Latchford on " Tree peonies," and Mr. S. Short will speak on " The making of a suburban garden."

The Lady of the House

should have a Clothes Line Reel for the yard. Clothes lines always up ; never let clothes fal into the mud ; never catch the unwary man passing under ; easy to put clothes on; easy to take them off—**complete—cheap.** Write for circular and quotation.

(See our Ladder Advertisement on last page of cover of this issue.)

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Remember—

Most of the very best

FRUIT TREES, VINES AND ORNAMENTALS

you see making such vigorous growth in the different orchards came from

The Helderleigh Nurseries

Write for our beautiful catalogue.

AGENTS WANTED **E. D. SMITH, Winona, Ont.**

Has Been a Force for Good

V. KNECHTEL, SECRETARY

The Seaforth Horticultural Society is in a more flourishing condition than ever. It has 119 members this year, and prospects of a larger membership for next year. In May we had a public meeting. The attendance was not as large as expected, but attention and interest was good. Mr. T. H. Race, of Mitchell, gave an address on "Bulb culture and its attractions," which was very interesting and instructive.

The society has been a force to increase interest and taste in our home surroundings, and the appearance of our homes has been much improved. A very much better quality and variety of plants and flowers are now seen. In our fruit culture there has been much improvement. The information supplied in the welcome Horticulturist has enlarged our ideas and stirred up our desire to have the best that is offered.

A great improvement is being made in the already extensive greenhouses of Mr. J. H. Dunlop, Toronto. The old houses are being torn down and four new ones substituted. The most modern greenhouse architecture is being used and every convenience added. On page 285 Mr. Dunlop has an advertisement offering the sash-bars, etc., for sale.

Canadian National Exhibition

TORONTO, ONT.

August 26th to September 11th, 1905

Entries close on Monday, August 14th, for Horticulture, Floriculture, Vegetables, Field Roots, Grain, Sections, Etc.

For prize lists and entry forms apply

DR. J. O. ORR, Manager and Secretary
TORONTO

GET OUR CATALOGUE OF
RUBBER STAMPS
AND STENCILS
THE SUPERIOR MFG. CO.
58 ADELAIDE ST. W. TORONTO.

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion; minimum charge, fifty cents in advance.

WANTED — SUBSCRIPTION CANVASSERS for The Canadian Horticulturist both in cities and in the fruit districts of Canada. Liberal commissions offered. Good men soon put on salary. Write The Canadian Horticulturist, Rooms 507-508, Manning Chambers, Toronto, Ont.

FOR SALE—FRUIT FARM OF 200 ACRES, Township of Niagara, will be sold en bloc or divided to suit purchaser. Hundreds of farms, stores, factories, etc., on my list. W. J. Doran, Manning Chambers, Toronto.

GREENHOUSE AND STOCK FOR SALE—TEN thousand feet of glass; one of the best equipped greenhouses in Toronto, located in the best residential sections of Parkdale, large plant trade; residence, stable and everything in good condition. Apply to F. C., care of The Canadian Horticulturist.

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Parks, Cemeteries, Public and Private Pleasure Grounds made by . . . . . .

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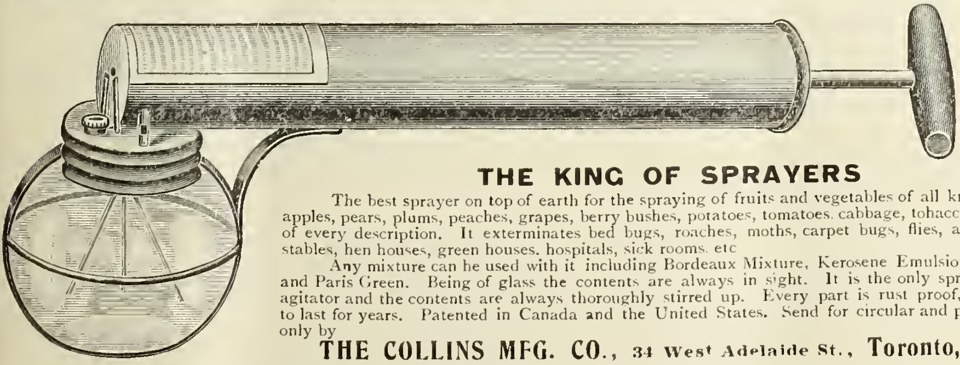
GRIMSBY

Drawings made to a scale, so that any gardener may carry them out. Correspondence solicited.



THE KING OF SPRAYERS

The best sprayer on top of earth for the spraying of fruits and vegetables of all kinds, such as apples, pears, plums, peaches, grapes, berry bushes, potatoes, tomatoes, cabbage, tobacco and flowers of every description. It exterminates bed bugs, roaches, moths, carpet bugs, flies, and disinfects stables, hen houses, green houses, hospitals, sick rooms, etc

Any mixture can be used with it including Bordeaux Mixture, Kerosene Emulsions, Hellibore and Paris Green. Being of glass the contents are always in sight. It is the only sprayer with an agitator and the contents are always thoroughly stirred up. Every part is rust proof, so its bound to last for years. Patented in Canada and the United States. Send for circular and prices Made only by

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Caught in a Glut

is what happens to the fruit grower who depends on one market to take his crop.

Fortunately their is no need to be thus caught. Canada is wide. There are many centres from Halifax to Calgary anxious to get good fruit from a reliable grower.

The Canadian Grocer is the medium through which the grower can reach these buyers.

An advertisement in our Fruit Department costs little and goes far.

Drop a card for rates.

The Canadian Grocer
TORONTO, ONT.

Extension Ladders.

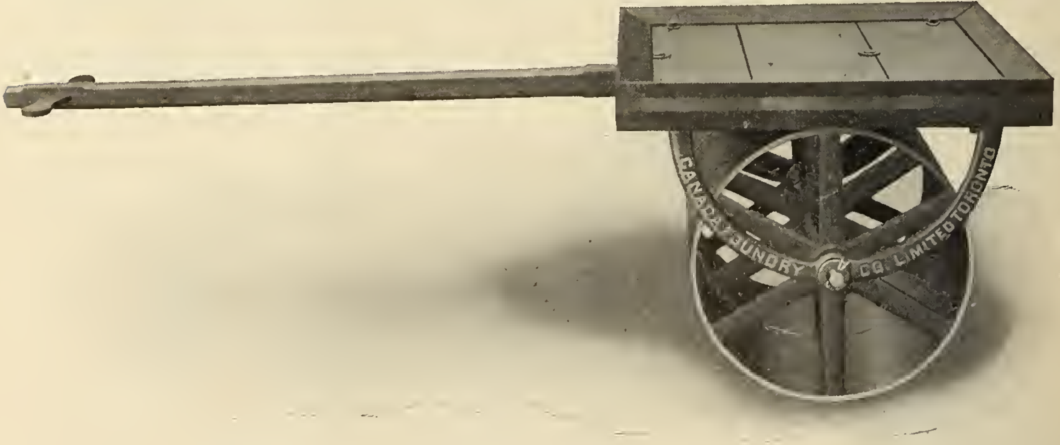
Of modern appliances for orchard work there are few quite so important as a good extension ladder. In the old days fruit growers took a pole of tamarack or cedar, ripped it in two half round sections and put rungs in. Where the height required was small, 10 or 12 feet, this served very well, but where, as it often happened, it was necessary to get to the top of a tree 25 or 30 feet high to get the apples or pears—well, we usually did not get there. Seldom had we a ladder long enough, or if we had it took a neighborhood "bee" to raise it, and when it was finally put in or let fall into place with a bump it knocked off half the fruit it was meant to gather.

With a good light safe extension ladder one man can place it just where he wants it, even a 32-foot ladder, then extend it and place it gently just where the best fruit is, even in the middle top of the tree where the long single ladder cannot be placed at all. Two or three sizes of good extension ladders in a small and moderate sized orchard, and more in a larger one, will pay for themselves in a few days in apple picking time. In this as in other farm and orchard appliances it pays to get the best.

NEW ADVERTISERS IN THIS ISSUE.

Canadian National Exhibition, Toronto.
Firstbrook Box Co., Toronto Ont.
Biggs Box Co., Burlington, Ont.
Geo. Vipond, Montreal, Que.

LAWN ROLLERS



Well made, light and serviceable. Can be weighted when desired.

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See Notice in Advertising Columns.

A Highly Commended Plum

The new Maynard plum, which is said to be the greatest plum creation of that wizard of horticulture, Luther Burbank, is being sold in Canada by Stone & Wellington, nurserymen, who have bought the sole right to sell this plum in Canada. On every tree they sell they are under contract to give Mr. Burbank a royalty. Mr. Burbank has sent out the Maynard plum with the assurance that it surpasses in quality and beauty of fruit any plum heretofore introduced. In fact, some leading growers believe that in the Maynard plum he has reached the point of perfection. In size it is very large, often measuring seven and a half inches in circumference. The form is nearly round, slightly flattened at the ends ; in color it is a rich crimson purple, deepening to royal damask as full ripeness is reached. A more beautiful fruit were hard to imagine. The flesh is firm even when dead ripe, but melting and juicy with a deliciousness indescribable. The fruit, therefore, for table use and as a shipper has no competitor.

Apple and Fruit Boxes

After considerable agitation covering many years the apple growers of Canada have opened their eyes to the necessity of marketing their fruit in boxes, along the same lines as is done by the growers in California, who have been so successful. The boxes containing California fruit are all well made and well printed, giving the contents a splendid display appearance.

The Firstbrook box Co., Limited, of Toronto,

Keep the weeds down by using the

"Handy Hand Scuffler"

the best tool in the market for farmers or gardeners. See Candian Horticultuuist of April for particulars. **Wm. Welsh, Kinkardine.**

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Fruit Commission Merchants

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Reliable——Prompt——Safe

MONEY EASILY MADE BY OUR READERS

$10.00 **will be given away free** by The Canadian Horticulturist to readers who purchase goods from it's advertisers. All you have to do is to tell the advertisers you read their advertisments in The Horticulturist

HOW TO OBTAIN THE MONEY

$5 will be given to the person who buys goods to the greatest value from advertisers in this issue before **July 30, 1905.**

$5 will be distributed, one dollar to each, among the first five persons making application, who have purchased goods from our advertisers.

Readers must tell the advertisers they saw their advertisements in The Horticulturist.

A valuable premium will be given to all who do not win cash prizes. A premium will thus be given to everybody who buys something from advertisers in The Horticulturist.

When applying for a prize readers must inform this office of the name or names of the advertisers they purchased from. Application for this bonus must be made before **August 15, 1905.** Address **ADVERTISING MANAGER, The Canadian Horticulturist, Toronto, Ont.**

Thro rebuilding operations we have a quantity of

Second Hand Material

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Sash Bars, Ridge, Puoiln,
Ventilators Glazed,
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Any person contemplating building can buy the above at bargain prices.

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NEW ADDRESS: 239 YONGE ST.

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LEADING
LANDSCAPE AND
COMMERCIAL

Photographers

IN CANADA

Call and see our new premises

239 YONGE ST. **TORONTO**

have taken the first place in the manufacture of fruit boxes, and the quality of work they turn out speaks for itself. Any information as to sizes, printing and prices will be gladly furnished on application. A great feature of the box goods is they are in great demand, command a much higher price than barrel goods, and shippers make a great saving in freight, as boxes can be packed on board cars and vessels very compactly.

Steamships Improved

Recognizing the importance of the green fruits, dairy and provision trade to the Dominion, and the possibilities of its great development, the Thomson line fleet has been fitted with the most up-to-date system of refrigeration and cool air, and the delivery to the consumer at London improved. An arrangement has been made with the Surrey Commercial Dock Co., London, Eng., to equip immediately alongside The Canadian Produce Warehouses west berth, in the Greenland dock, with refrigerated and cool air chambers at a cost of over £70,000. The berth alongside the warehouse so fitted is for the exclusive use of the Thomson line, and their vessels are the only ones that can discharge direct from the vessel's hold into the specially prepared cold storage provided for the apples, cheese and butter.

The Thomson line has procured the exclusive use of the Gould patent loaders in the ports of Montreal and Portland. The loaders are so constructed as to pass package goods into the holds of the vessels without any jar, squeezing or breakage, and the line is thus enabled to deliver its cargo at destination in the best condition. We can confidently recommend these loaders to apple exporters. This line has had many years' experience in the carrying of green fruit, and has earned an enviable reputation both in the Mediterranean and Atlantic trades. All the vessels of this line are fully equipped with steam and sirocco fans, and no expense has been spared to make these vessels the best of any on the Atlantic.

Recognizing the necessity of an up-to-date refrigerator service on the Glasgow route, the Donaldson line has fitted up special steamers, giving unexcelled cold storage facilities for the carriage of all classes of products, the carriage of apples and other green fruits and vegetables being a specialty. In addition, the vessels are fitted with sirocco fans of the latest type, which make this line so favorably known as amongst the most successful apple and fruit carriers on the Atlantic.

Quality and Price.—The fruit grower who prides himself on the quality of his fruit and who is careful in grading and packing deserves a better price for his fruit than his less careful neighbor. The way to get that price is to brand his packages and advertise the brand in a medium that reaches the trade.

ATLANTIC REFRIGERATOR SERVICE

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Montreal and London Service

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Devona, cold storage and cool air, **July 15**
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Hurona, cold storage and cool air, **July 29**
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DONALDSON LINE

Montreal and Glasgow Service

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Lakonia,... cold storage..... **July 13**
Salacia,.................... **July 20**
Kastalia,... cold storage..... **July 27**
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The "Safety" Fruit Picker

does away with ladders and climbing, and ensures safety to the operator and avoids bruising of the fruit.

The "Safety" Fruit Picker will save money in clearing up your trees, and is the "proper thing" for picking "Exhibition" fruit.

DESCRIPTION

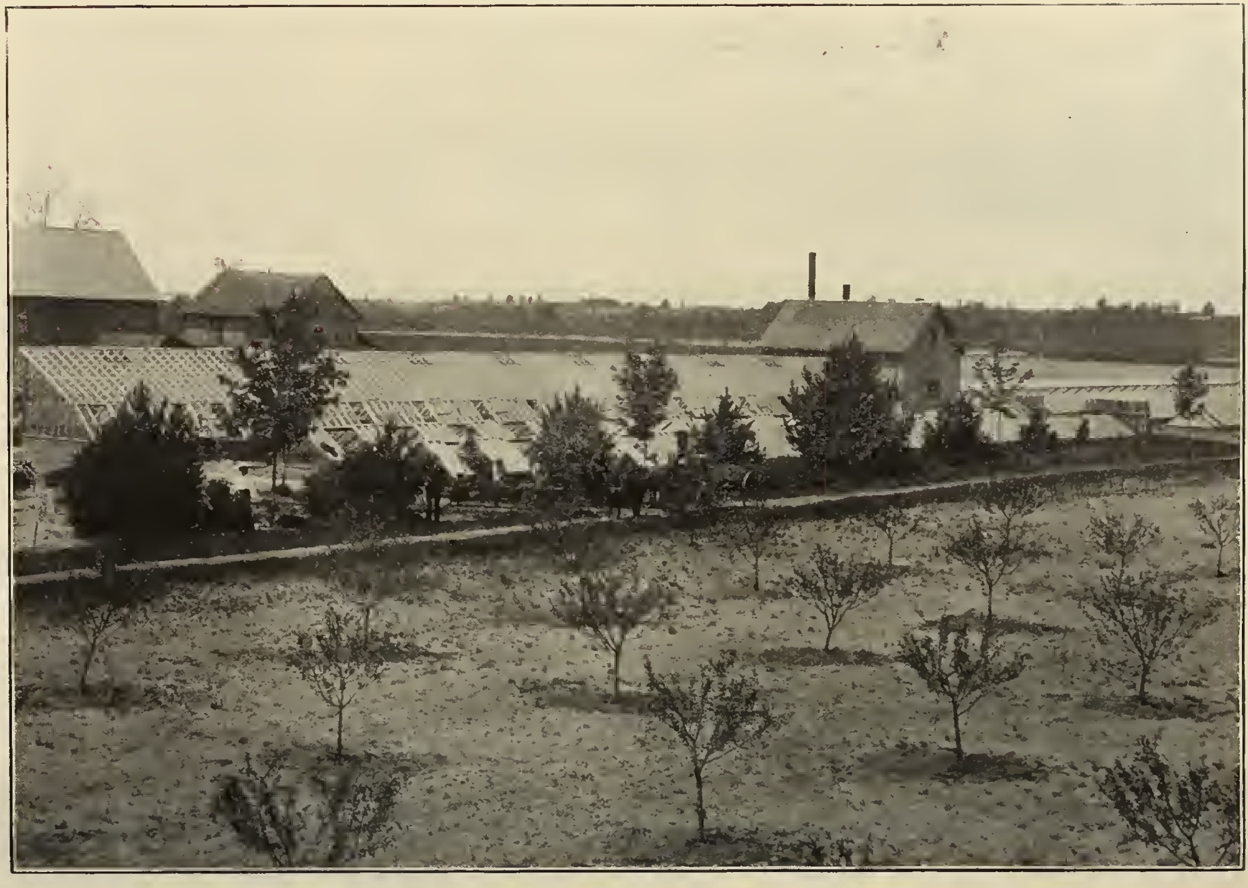
The "Safety" Fruit Picker consists of a rubber covered wire hood, attached to a 12 foot pole, which grasps the fruit the same as the human hand, tilts it up and a single twist releases the fruit and drops it down the chute into a canvas bag at the waist of the operator without bruising or coming in contact with other fruit. It can be operated by a woman or child as easily as by a man.

The pole is bamboo, which insures lightness and stability, and is divided into 8 and 4 foot lengths, which are adjustable and can be used for large or small trees, at the pleasure of the operator. The wire spring, which holds the mouth of the chute in position, allows for the interference of the branches. The whole outfit weighs only 2¼ lbs.

The bag is made of canvas duck, and is attached to a steel wire frame, which conforms to contour of the body, and is strong and durable and holds half bushel of fruit; is held in position by a wide canvas strip, which goes over the shoulder with an adjustable snap o secure it, and which is easily detached to facilitate he emptying of the bag when full.

Price, complete, $2.00

The Safety Fruit Picker Co. of Ontario,
Limited.
Ridgeville, Ont.



A Fruit Farm and Vegetable Greenhouse and Garden Near Leamington, in Essex County, Ont.

On page 315 of this issue appears an interesting interview with Mr. J. D. Fraser, of Leamington, Ont., who has gone in for the raising of vegetables for the early markets on an extensive scale, and whose greenhouses are here shown. Mr. Fraser has six houses, part glass and part cotton, 210 feet long by 10 feet wide; two 150 feet long by 9 feet wide, and one 167 feet long by 31 feet wide. He has made an invention which enables him to drive up beside his greenhouses and throw in or remove dirt through the sashes. The illustration shows some of these sashes open.

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WIDE AWAKE BRITISH COLUMBIA FRUIT GROWERS

A. M'NEILL, CHIEF FRUIT DIVISION, OTTAWA.

THE Province of British Columbia is progressing very rapidly in the matter of fruit growing. The climate (we might say climates, for British Columbia has several) has much to do with this advancement. The islands, coast and lower mainland are particularly adapted to small fruits, though excellent fruit trees are also grown in large sections of this country. The semi-arid inland valleys are particularly adapted, under irrigation, to the cultivation of apples, plums and cherries. With the development of the various schemes for irrigation it is not at all improbable that in the near future British Columbia will supply fruit enough to meet the demands of the prairie provinces.

Another most potent cause for the excellence of the methods employed in British Columbia is the fact that many of the fruit growers have gone into this province quite lately totally unacquainted with fruit growing, having, however, considerable capital. These men are not loaded down with a quarter of a century of prejudice, but come to their work fresh and willing to imbibe the latest and best from books and from their most successful competitors in the business. This will account for the fact that on the average the methods of British Columbia are infinitely ahead of those of the average fruit grower in eastern Canada.

In the Okanagan Valley irrigation is almost a necessity. This determines, to some extent, the nature of the product, as well as the methods employed in producing it. Clean culture is almost uniform. Where water has to be conveyed for many miles in an artificial water bed, constructed at great cost, it does not take long to convince the fruit grower that he should not waste it upon grass and weeds.

EARLY FRUITING.

The control which the orchardist has over his trees contributes to the early fruiting of nearly every variety of tree, and probably the dry atmosphere has much to do with the perfect pollenation of fruit blossoms. The setting of the fruit is usually what an eastern fruit grower would call phenomenally heavy, and has led to another orchard practice, almost unknown in eastern Canada, namely, thinning of the growing fruit, even on apple trees. It would strike the average Ontario or Nova Scotian grower as a waste of money to pay a man $1.25 a day to pull good apples off a full grown apple tree, but this is the common practice in British Columbia, and one which is a necessity.

The one fruit tree that is not thinned is the cherry. I took a branch of May Duke cherries, a foot long, from the orchard of Mr. Pridham, of Kelowna, and found that there were 154 perfect cherries on it. Apparently there were dozens of branches that could have been selected from the same tree quite as heavily loaded.

The dry atmosphere probably accounts for the absence of fungous diseases in apples, cherries and plums, but it is the excellent cultural methods that have to do largely with the fine quality of the fruit. Here again the influence of the environment is very clearly to be seen. The local market is a comparatively small one. Everything is packed for the distant markets. Hence, great attention is given to grading and packing. Their teachers in this were the Americans in California, Washington and Oregon, who by long and costly experience had demonstrated that it did not pay to ship inferior or over ripe fruit.

The fruit grower of British Columbia, profiting by this experience, spends time and thought upon packing and packages that would seem wasteful to an eastern grower, but the result of this is seen in the prices which they obtain for their fruit. Calgary markets give about $2.50 per box for British Columbia fruit when they only give $4 per barrel for Ontario fruit.

There is no reason why the apple growers of Ontario should mix different grades, and ship in barrels, fruit, which if properly packed and graded, would equal in every respect the British Columbia fruit. It is very true that the eastern orchardist has a larger proportion of No. 2 fruit than the British Columbia grower, but there is comparatively little difference between the best fruit of Ontario and the best fruit of British Columbia. The difference is largely in the intelligence, skill and care of the growers.

HIGH WAGES.

Surprisingly high wages are paid to laboring men. For ordinary orchard work $1.25 to $1.75, with board, per day was given. Some of the larger plantations have expert fruit men from the Pacific states to whom the owners pay salaries that professional men in the east might envy.

Many of the larger estates on which cattle feeding was tried are being broken up into small lots devoted to fruit growing. The delightful climate, where the temperature rarely goes, even in the coldest weather, down to zero, and that only for a few weeks in the year, has attracted many farmers, who have accumulated a competency in Manitoba or the Territories. The next largest class would be comparatively wealthy Old Country people. All these make most desirable citizens.

The social conditions are not those of a primitive settlement. There is an air of refinement and leisure everywhere which bespeaks not only culture but material prosperity. Libraries and lawn tennis flourish with the fruits. Churches and schools are well equipped and generously supported. Parks and home grounds abound, where trees, grass, flowers, rocks and water are worked into beautiful landscape effects not easily duplicated in the east. It is not a mere figure of speech to say that British Columbia is the California of Canada.

Grain in the Orchard.—Many advocate leaving grain in the orchard in the fall for the mice. They claim that when there is plenty of grain the mice will eat it and leave the trees alone. My experience has been that when I leave any vetch on the ground that has seed in it the mice will gather in great numbers, more than they otherwise would, and that they will girdle the trees just the same.—(Jos. Tweddle, Fruitland, Ont.)

Draining Orchards.—I might as well go out of business as give up tile draining in my orchards. One of the drains stopped up one spring and I lost 15 trees through the water backing up.—(Adolphus Pettit, Grimsby, Ont.

SODA BORDEAUX (BURGUNDY MIXTURE)

FRANK T. SHUTT, M. A., CHEMIST, EXPERIMENTAL FARMS.

DURING July a number of reports were received, both from Ontario and Nova Scotia, stating that serious injury has resulted from the use of Soda-Bordeaux on apples, plums, cherries and peaches. These communications have been accompanied by requests for information respecting this newly-introduced mixture. A brief account of certain experiments recently conducted at the Experimental Farm, Ottawa, may, therefore, be of value and interest to fruit growers generally.

In Soda-Bordeaux, or Burgundy mixture (suggested as an alternative for the ordinary Bordeaux mixture for potato blight and rot), washing soda (carbonate of soda) is substituted for lime in the preparation of the spray. Two formulæ have been recommended:

	A.	B.
Copper sulphate (bluestone) . .	6 lbs.	4 lbs.
Washing soda (carbonate of soda)	7½ lbs.	5 lbs.
Water	40 gals.	40 gals

A simple calculation will show that the proportion of bluestone to washing soda is the same in each, but "B" is a more dilute preparation.

As far as the writer can learn, paris green, white arsenic, or some other arsenical compound, had been added to the Soda-Bordeaux in every case in which injury was reported from application to fruit trees. When paris green is mixed with ordinary Bordeaux mixture it is not dissolved, but remains in suspension, and experience has shown that no injury results from the use of such a spray. When, however, paris green is added to Burgundy mixture it is partly dissolved, owing to the alkaline compound more or less corrosive to foliage. It has long been known that soluble arsenical compounds have this injurious effect upon foliage, and consequently cannot be used in insecticidal mixtures. It follows from this consideration that the addition to the Burgundy mixture of a solution made by boiling white arsenic and sal soda (resulting in the formation of arsenite of soda), as practiced by some, would render the spray extremely injurious. For these reasons it might well be conjectured that the addition of paris green or arsenic in any form to the Burgundy mixture would render it unsafe for use on fruit trees.

One of the Fruit Farms For Which British Columbia Is Becoming Famous.

The Richter orchard and farm at Keremeos, Similkamean, British Columbia, is here shown in part. The light background is the steep side of a high mountain. On this farm the alfalfa fields yield four crops annually. Apricots, peaches, almonds and grapes, including Black Hamburg, reach perfection.

Our recent experiments comprise trials on apples, cherries and plums with the following mixtures:

"A"—Soda-Bordeaux (Burgundy mixture:

Copper sulphate (bluestone)	4 lbs.
Washing soda	5 lbs.
Water	40 gals.

The bluestone and washing soda were dissolved separately in half the total volume of water and the resultant solutions mixed. This mixture, it will be observed, contains no paris green or arsenic in any form.

"B"—Soda-Bordeaux, as above, to which was added 4 ounces of paris green.

"C"—Soda-Bordeaux, as above, to which was added a solution made by boiling together 8 ounces of white arsenic and 2 pounds of washing soda with 1 gallon of water.

RESULTS AND CONCLUSIONS.

"A"—No apparent injury to the foliage of apples, plums and cherries.

"B"—Apples: A few leaves slightly scorched at the edges. The probabilities are it will be found that the varieties differ somewhat in their ability to resist the corrosive action of this spray, but the results obtained so far indicate that its use would be attended with a considerable degree of danger in the apple orchard.

Plums: Scorching of the leaves quite evident, though injury not very serious.

Cherries: Results rather similar to those obtained on apple foliage. It is extremely doubtful if this spray could be used for this crop with safety.

"C"—Apples, Plums and Cherries: In every instance in which this spray was used excessive injury resulted. The foliage was badly scorched, subsequently becoming crisp and falling. The damage was such as to show conclusively that this spray is quite unsuitable and dangerous in the highest degree for all classes of fruit trees.

In a word, Burgundy mixture, pure and simple, has shown itself, as far as our experiments have gone, to be non-injurious to foliage. When, however, paris green is added the spray becomes more or less corrosive to foliage and its use is attended with danger. The addition of soluble arsenical compounds, as in "C," renders the spray extremely injurious to foliage, entirely prohibiting its use."

When it is desired to use paris green as an insecticide in the spray, Bordeaux mixture made with lime only should be used.

BURGUNDY MIXTURE HARMFUL

THE Burgundy mixture, used in many orchards during the past season, has given poor results in several cases. Growers in the Winona and Grimsby districts have destroyed a great percentage of their trees as a result of its use.

"The total damage to my trees amounts to about $1,000," said Mr. E. D. Smith, to The Horticulturist a few days ago. "Nearly 2,000 plum trees and 500 cherry trees have been injured. Some trees were so badly scorched that I do not think they can recover. Smaller trees received a heavier spray than larger ones, so that the younger stock was damaged the most.

"We used the proportions recommended by the leading authorities, but did not test every time with litmus. With the ordinary Bordeaux mixture an excess of copper sulphate is all that has to be guarded against. An excess of lime makes no difference. In the Burgundy mixture, however, the proportions must be just right. An excess of sal soda seems to be just as injurious as an excess of copper sulphate. It is easy to prepare, but just as easy to make a mistake in the preparation of it. The nozzles never clog, and the mixture being colorless does not discolor the fruit, but I do not think I shall ever use it again."

THE SAN JOSE SCALE STILL SPREADS

J. FRED. SMITH, SCALE INSPECTOR, GLANFORD, ONT.

THE San Jose scale is slowly but surely spreading from all the old infested spots in Ontario. Only those who have been in close touch, and have taken a keen interest in the spread of the scale, are aware of how far it has spread since the Act was passed in 1898.

When I was appointed scale inspector in February of that year it was expected by the department that all the scale in the province would be destroyed and that by passing an Act to prevent trees coming in from the United States we would soon be free from it. Instead, there is more scale in Ontario to-day than ever before.

It spreads so quietly and insidiously that it may be in an orchard for some time before the owner is aware of its presence. I do not know of a single case where scale has been found in an orchard, and where it was allowed to remain long enough to spread from the original tree, that it has been cleaned out. The reason for this is plain when you are conversant with the way it spreads. Very frequently trees nearest an infected tree are practically free from the pest, while those at a considerable distance are badly infested. It is liable to break out anywhere within a mile of the original infested tree.

Despite the fact that some of the professors of this province scoffed at my opinion that the principal means of its spreading is by the winged males I still hold firmly to that opinion. These winged males carry the infant ,or larvae, from an infested tree and thus perpetuate the species. Otherwise the scale would be exterminated because the tree would soon die and the death of the scales on it would follow.

My reason for considering the male scales the chief medium of its spread is the one of choice. Some varieties of trees will stand in the midst of a very badly infested orchard and be almost free from scale, while those around it are literally covered with it. I cannot see why some people consider it such a ridiculous idea. Take for instance the spread of the codling moth. Every one knows that its spread is by the moth herself, which flies around and deposits her eggs on the apples, not indiscriminately, but after making a choice. Every orchardist who is at all observant about insects, knows that some varieties of apples never have worms if there are plenty of others to be attacked. The moth distinguishes the varieties when the fruit is so small that we ourselves could not tell what kind it was if we did not see the tree on which it was growing.

Another reason for thinking the male scale is the culprit has been obtained from information gathered after an infested tree has been planted in an orchard. I have known cases where the tree had stood for two or three years and then, on becoming aware of the presence of the scale the owner destroyed the tree and there has never been a scale found there since. But I have known other cases where such a tree was left for a time, and just as soon as it became overloaded and a spread was necessary for the perpetuation of the species, the scales could be found not only close by but at a distance. Especially is this so if varieties near are not to its taste. In a district where the scale is bad growers frequently say, "No, you never find much scale on those trees. They do not seem to like them."

I have said that I do not know of an instance where the scale had spread from the original tree or trees, and I wish to emphasize the words "spread from," as there are, I think, somewhere about 100 places in different parts of Ontario where the scale was caught in time, and not a scale has ever been found there since. A notable instance of this came under my observation this spring. In the year 1898 a consignment of trees was shipped to Belleville, and during inspection it was found that this carload had some scale in it. A list of all the places where the trees had been sent was secured, and everything on which scale could be found was destroyed. This spring the growers of that section became alarmed and sent in a petition to Hon. Mr. Monteith, the Minister of Agriculture, asking for an examination, and I was ordered to go down. I made a careful examination of those places most convenient to Belleville in which the scale was found in 1898. Although it is now seven years since those trees were destroyed, which would give the scale time enough to make an appearance, still I could not find a single scale. The fact, however, remains that there is more San Jose scale in Ontario than ever before.

New Heads for Cherry Trees

J. L. HILBORN, LEAMINGTON, ONT.

What is the best plan to deal with my lot of 25 cherry trees? They are thrifty and measure one and a half inches through the trunk. I procured them two years ago from the corners of the fences. They grew from the common cherry. I would like to grow new tops of the latest and best varieties. Shall I do it by budding or grafting, and at what time, and should the work be done in a different way from apples?—(J. G. Wait, Wicklow, Ont.

The cherry cannot be grafted so far as I know. The tops might possibly be changed by budding in early August, but I do not think it advisable to try it. I would grow them as they are, as that is a good variety. The Montmorency is considerably larger, finer and later, but I do not think it practical to change such large trees. They are always budded the first season of their growth.

Picking and Handling Apples

W. H. DEMPSEY, TRENTON, ONT.

APPLES require great care in gathering and handling if the most is to be made of them. They should never be picked until they are matured, well colored, and of full growth yet firm. They should, however, be picked before they have commenced to decay or fall from the tree ripe.

I have found that apples picked under the conditions described, and placed in the fruit house the same day, will keep better than when green or over ripe. When green they are subject to scald in the barrel or box if the temperature is warm, and if there is any fungous on them it will continue to develop. I have seen hundreds of barrels thrown out from this cause. If over ripe a great many will be found to have decayed by shipping time and many more will decay before they reach the market, and arrive in a wet, wasty condition.

I Have 1,200 Plum Trees in bearing, including 60 or 70 varieties. There are two distinct classes of plums, the Domestic and Japanese. The Japan class has a positive brilliant color with a certain pineapple flavoring. It is also claimed to be more exempt from plum rot and the attacks of the curculio. In the domestic class the best varieties are Lombard, Reine Claude, Glass Seedling, Bradshaw, Niagara and Imperial Gage. Of the Japan class the leading varieties are Abundance, Burbank, Willard, Chabot and Satsuma.—(A. W. Peart, Burlington, Ont.

If Trees Are Overloaded so that they cannot bear fruit to maturity it is better to thin the fruit in August than put props under each limb. The prop I prefer is the removal of the fruit. If the tree has such a load that it cannot hold it up without splitting, by all means remove enough to bring the tree through without injury, so that it will be in a condition to fruit the following season instead of having to wait a year or two to recover from the overload.—(W. H. Dempsey, Trenton, Ont.

SUMMER APPLES IN COLD STORAGE

G. B. ROTHWELL, B. S. A., OTTAWA, ONT.

DURING the summers of 1903 and 1904 I conducted several experiments with summer apples in a refrigeration building of the Hanrahan type. Two main objects were kept in view: first, to illustrate the advantages of an efficient type of ice refrigerator to the farmer; second, in accomplishing the above end, to show the value of storing non-keeping varieties of summer apples. In the working out of the latter, owing to a number of experiments being suggested by the differing conditions encountered, the work resolved itself into the handling and methods of storing apples.

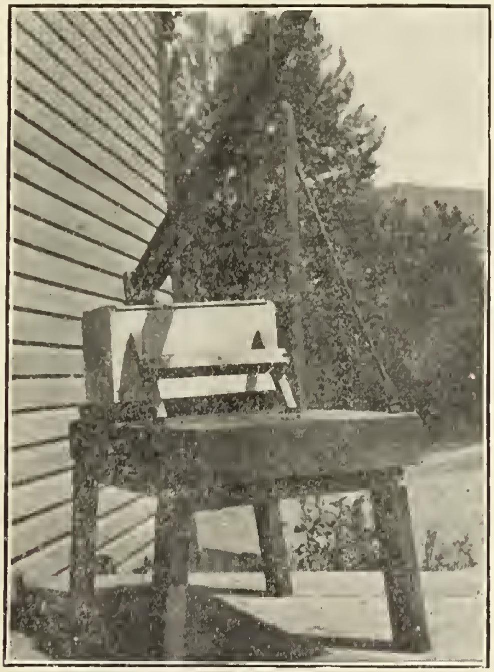
The apple used, in the majority of the experiments, was the Duchess of Oldenburg. This apple is largely grown in eastern Ontario and in the eastern provinces, and is a typical midsummer apple. The fruit is medium to large in size, of a light yellow color striped with bright red, and has, when mature, a very agreeable semi-acid flavor. It is, at best, a poor keeper, retaining its flavor and texture only a short time after maturing, if kept under ordinary temperatures. For this reason and because of its popularity on local markets, especially in more northerly districts, it was chosen as a basis for experimentation.

METHODS OF PACKING.

Four methods of packing were adopted: (1) Stored in ordinary bushel boxes; (2) ditto, each specimen being wrapped in a quarter-section of unprinted newspaper; (3) wrapped in tissue paper and again in waxed paper similar to that used in wrapping butter; (4) packed in small kegs of sawdust. Sixteen bushels were stored, four separate pickings and four separate packing methods.

Pickings were made on August 4, 15, 25, and September 1. The apples picked on August 4 were immature in every way, being only slightly colored and acid in flavor. Those picked on August 15 were also immature but were fairly well colored. Those picked on August 25 were almost ripe, lacking only the yellow tinge to being fully colored and being only very slightly acid in flavor. Those picked on September 1 might be said to be dead ripe.

The two first lots, immature when picked, retained their immaturity throughout. On November 15 several were spotted on the green or uncolored side, the spot somewhat resembling a sun-scald. They still retained their acid flavor, but shortly after lost even this and became flat and tasteless. The lot picked on August 25 were, on December 15, perfect in texture and flavor, although they had at this date evidently reached their limit of keeping. Shortly after a distinct falling off in flavor was noticed. Those picked on September 1,



Ready For Pressing—No. 1.

A handy device used on Coldstream Ranch, Vernon, British Columbia, for the packing of fruit, is here shown. The box of fruit that can be seen is ready to be pressed so that the ends of the cover may be firmly nailed. Before applying pressure by means of the bar of wood over the box the small wooden frame work, leaning against the box, is placed on top. The pressure is applied on this framework to prevent injury to the fruit. As this framework is not as long as the box there is plenty of room at the ends for nailing.

dead ripe when stored, were, on November 15, lacking in both texture and flavor. They were soft and in some cases discolored and the flavor was becoming flat.

THE EFFECT OF WRAPPING.

Comparing the unwrapped apples with those wrapped; on November 15 no decay was found in the latter, while in the former two or three specimens were removed. The flavor of the wrapped specimens was, if anything, slightly better than the other. The third lot, wrapped more carefully in double wrappings of paper, showed a perceptible improvement over the newspaper-wrapped lot. However, it is doubtful if the extra gain was worth the extra trouble and outlay. Sawdust was found, in this case, to be a very undesirable material in which to store fruit.

Similar experiments were made with the Langford Beauty and the Fall St. Lawrence. Both are typical varieties of non-keeping, early fall apples. The Fall St. Lawrence apples were placed unwrapped in three bushel boxes, each box representing a different packing. Some were picked on September 12 and were rather immature. These did not improve as the storage period advanced. Others picked on September 18 were almost perfect. They had reached their limit on December 1, but were then perfect. Others picked on September 27 were fully matured. They lost their flavor earlier than did those of the former lot.

The Langford Beauty specimens were also placed, unwrapped, in bushel boxes. They showed the same tendencies as the other varieties. The earlier picked lot retained their immature flavor throughout the experiment. Their texture also remained perfect throughout. Those picked on September 7 were almost fully mature and were perfect on November 15, but had then reached their limit. The peculiarity of this variety seemed to be its early loss of flavor, the texture remaining firm.

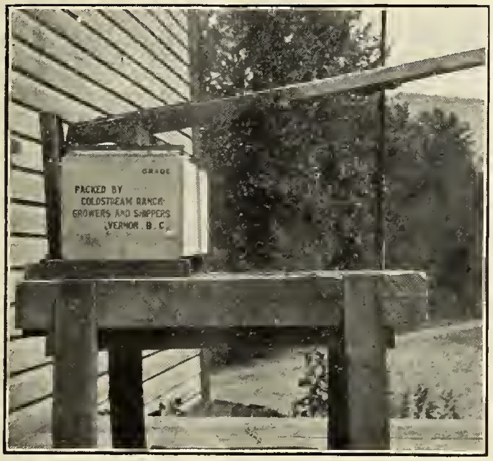
BENEFITS OF WRAPPING.

A separate experiment was carried on with the Tetofski apple to ascertain the benefits of wrapping fruit. The Tetofski is a very early variety, and it is found particularly difficult to keep it for any length of time after maturity. Consequently it is a very suitable variety with which to test more fully the benefits of wrapping. The apples were placed in four bushel boxes on August 1, when they were almost ripe. The same methods of wrapping were employed as in experiment 1, namely, (1) unwrapped, (2) wrapped in newspaper, (3) wrapped in tissue paper and waxed paper, (4) packed in sawdust.

The results obtained were practically the same as with the Duchess apple, with the exception that these apples, being soft and easily bruised, were even more benefited by the protection afforded by the paper. These apples, under any method of storage, could not be kept for more than one month. September 1 is about their limit of keeping. On this date the wrapped specimens were perfect in appearance and flavor. The unwrapped specimens were discounted considerably by bruised and spotted specimens. Sawdust, again, proved very undesirable as a storing medium.

THE POINTS PROVED.

The experiments show conclusively that the early apple is very greatly benefited by some protective covering. Although this is especially the case with the early apple, many late varieties, such as the American Russet, are similarly benefited. Where apples are stored in small quantities for private use or held for fancy trade, wrapping should be resorted to. A layer of ordinary newspaper surrounding an apple prevents it from injury by jarring, rubbing, or slight pressure. It lessens the liability to damage from sudden excesses of heat and cold, in cases where the temperature may be influenced from external sources; it



Ready For Nailing—No. 2.

This shows the pressure being applied and the bar or handle being held in position by being caught in a tooth of the iron rod standing up from the end of the stand. The cover is ready to be nailed on. Notice the manner in which the box is stamped. (These photographs are printed through the courtesy of Mr. Alex. McNeill, Chief of the Dominion Fruit Division.)

checks transpiration, isolates specimens in which rot or scab may appear, and has sufficient influence over the fruit to amply repay for the trouble of wrapping. Where large quantities are stored, however, such a practice would be out of the question.

THE HANDLING OF FRUIT.

Careful handling before storing is the most important phase of the industry. No matter how perfect an apple may be on the parent tree, a slight bruise given when handling and magnified during its storage period very greatly lessens its value when removed from storage. Experiments conducted with Duchess and Tetofski showed clearly the benefit of careful handling. It must be remembered that the low temperature of a storage exerts no "mysterious influence" over fruit. It cannot heal bruised apples nor remove scab or rot. It can, however, check the spread of a disease, or also, the injury caused by a bruise, but these influences are rather over-estimated. If the apple is to leave the storage and reach the consumer in perfect condition it must necessarily enter it in that condition.

The importance of storing as soon as the fruit is picked cannot be too strongly emphasized. It is a very common practice among growers to allow the fruit to remain in "pits" or piles in the orchard, previous to storing it. An experiment was suggested by just such a case. The owner of the apples in question claimed that this delay exerted a considerable influence over the ultimate keeping qualities of the apples. It is easily shown that an apple picked when almost ripe, will, if allowed to remain under ordinary conditions, ripen much more rapidly than if it were allowed to remain on the tree. The effect of severing it greatly accelerates the speed of the changes involved in the maturing process. This being so, the ill effects of piling apples in the orchard are very apparent and an easy explanation is afforded for the behavior of the fruit in the experiment. Not only did the fruit ripen more rapidly, but its maturing was still further quickened by the heat of the ground and by any heat and moisture developed in the pile. Immediate storage after picking is one of the essentials to successful fruit storage.

COMMERCIAL VALUE.

The value of storing early apples for commercial purposes is a most important question. Experiments made indicate that the practice of holding over such an apple as the Duchess for comparatively long periods would be a risky procedure. Such an apple cannot be stored for a much longer period than a month or a month and a half, leaving a reasonable length of time for disposal after removal. The real virtue of the early apple is that it is early. It has no other outstanding points of superiority over the fall varieties, and would stand but a poor chance if brought upon the market in competition with them.

A long storage may not be advisable, but great benefit may be derived from one of shorter duration, especially where the fruit is to be disposed of on local markets. In eastern Ontario, where the early apple is so widely grown, the crop ripens "all in a heap," as it were, and must be disposed of with due haste before it deteriorates. The grower must content himself with prices which make the handling of such varieties unprofitable. Hundreds of bushels have been sold for as low as 25 cents per bushel simply because a quick sale was imperative. Two or three weeks later similar apples sold at 35 to 50 cents per bushel. The employment of some method of cold storage would have made the delaying of sale possible, and resulted in great gain to the producer.

Actual Co-operation

THE value of cooperation is recognized by the members of the Kootenay Fruit Growers' Association, of Nelson, B. C., which was formed last year and has accomplished excellent work. The objects of the association, as announced in a circular which Secretary Thos. Morley has sent to the fruit growers in the Nelson district are as follows: To encourage the growing of choice fruits and vegetables; to secure to the fruit growers and gardeners of the Kootenay district, who are members of the association, all possible advantages in the marketing of their produce; to create a demand for the produce of the association; to use their combined efforts for the prevention of plant diseases and insect pests; to prevent the importation of infected nursery stock; to collect and distribute information of value to its members; to secure by cooperation the lowest prices on fertilizers, crates, boxes and such other supplies as may be required; to secure lower freight rates, and to expedite the delivery of the produce of its members.

Early this season the secretary issued a circular to the members of the association and enclosed forms which they were to return to him showing the number of berry crates, collapsable berry boxes, plum and cherry baskets and crates, rhubarb crates, pear and apple boxes, etc., they might desire. As soon as the secretary had secured a list from all the members of the supplies they wished, he was able to purchase the supplies more cheaply by getting them in large quantities. Much of the fruit of the association is sold in Winnipeg and the towns and cities of the central west.

Value of Wood Ashes

PROF. F. C. SEARS, WOLFVILLE, N. S.

How heavily should wood ashes be applied in orchards? Will they hurt a growing cover crop, or should they be applied just before turning under? If so, would they not be too late to benefit the existing crop?—(A. J. L., Ontario.

Wood ashes are so variable that it is difficult to answer this question. Analysis of ordinary Canadian hardwood ashes shows about 6.15 per cent. potash and 1.90 per cent. phosphoric acid, while soft wood ashes run little more than half that amount. This, too, is for ashes which have been well taken care of. Ashes as bought on the market run all the way from the percentage given to nothing. I should consider one ton per acre a good dressing. I should not apply them to growing cover crops. Application in the spring before plowing is better. They would benefit that season's crop because much of their fertilizing constituent is immediately soluble.

We Cannot Grow Pears or European plums in this district. I have tried Flemish Beauty and Keiffer, two of the hardiest varieties of pears, and both froze out. In plums I have tried Moore's Arctic, Lombard, Smith's Orleans, Abundance, and many other hardy varieties, but they met the same fate as the pears. I never yet had a good crop of either.—(Dr. McCallum, Smith's Falls, Ont.

A SUCCESSFUL COOPERATION ENTERPRISE

COOPERATION is in the air. The fruit growers of Ontario are alive to the necessity of cooperating more in the handling and marketing of their fruit. This is evidenced by the numerous cooperative associations that are being formed and by the various plans which are every now and then brought forward in an effort to enable fruit growers to obtain more for their crops.

The importance of the subject being thoroughly realized, The Canadian Horticulturist purposes from time to time describing various cooperative movements which are in successful operation among fruit growers. The Niagara District Fruit Growers' Stock Company, Limited, was formed 25 years ago to assist the fruit growers of the Niagara district to market their fruit to better advantage. While this company has had its up and downs, the fact that it has existed all these years and that it has increased in strength is the best evidence that it has been of value to the fruit growers of the Niagara District.

An editorial representative of The Horticulturist recently called at the head office of the company at Grimsby and had a chat with Mr. Murray Pettit, of Winona, the president of the company, and Mr. J. W. G. Nelles, the secretary. " When we started the company," said Mr. Pettit, " it was capitalized at $10,000, but in 1894 we increased the stock to $20,000, the shares being placed at $100 each. We have about 100 shareholders, principally in Lincoln and Wentworth counties, although some live in Essex.

" At the time the company was formed the commission men in the leading cities had the situation practically in their own hands. They were slow in reporting sales and the growers were unable to ascertain what their fruit had realized until two or three months after it had been sold. Our first intention was to send members of the association to the different markets to sell the fruit of the members of the company. An effort was made along this line but was finally given up, partly on account of the short fruit season, which prevented the agents from building up a trade, and partly on account of the competition with the commission men, who had the great advantage of being located in the cities.

" Gradually we changed our methods until finally an arrangement was made with the commission men in the different cities whom we knew to be reliable. We agreed to ship our fruit to these men only, and in return required them to furnish bondsmen every year. These bondsmen we insisted should be worth in their own right from $2,000 to $5,000 each.

" This method has been followed ever since. The commission men deduct the freight rates and charge seven per cent. commission on all sales. The regular commission is 10 per cent., but the commission men are willing to charge us less in view of the fact that they do not require to have agents in the district where our company has shareholders. The company supplies the commission men with agency books. The commission men report directly to the head office at Grimsby after each sale, the price realized daily. They are supposed to report every week and most of them do so, sending the money and a list of the sales."

PROMPT RETURNS.

" I generally receive reports," broke in Mr. Nelles, " on Tuesday. Every shareholder thus has his money by Wednesday. The contracts between the company and the commission men are signed at the beginning of the season. The commission men are given the privilege of handling all the fruit of the company sent to their city, and in return they agree to report to us weekly. The commission man who is slow in making returns runs the danger of losing the agency. We have agents in 26 or 27 cities in Ontario and Quebec. Some years we have had as many as 34 agencies. About one-third of the cities report daily the price which is being paid and their reports are placed in the hands of the growers."

"Our members," said Mr. Pettit, "are nearly all large shippers. Most of the shareholders in Essex county live near Leamington, Kingsville or Walkerville. All kinds of fruit are handled, starting with early berries. Three per cent. covers the cost of the secretary's expenses, office rent, etc. The growers are sure of receiving the money for their sales as the company guarantees the price.

"We ship for about 300 growers in the different counties. Our business has run from $75,000 to $100,000 per year. While the company is not making money, its financial basis is better than for 15 years."

Among the leading directors of the company are Mr. Murray Pettit, of Winona, president, and Messrs. A. H. Pettit, of Grimsby; Robt. Thompson, W. H. Bunting and Andrew Haines, of St. Catharines.

Likes a Shallow Box

W. V. HOPKINS, BURLINGTON, ONT.

FOR 15 years I have been shipping apples in boxes 12 inches wide and nine inches deep. I have three grades, large and small sound fruit and a number two. I am compelled to have the packing done by women. It is difficult to see well and place apples properly in this box, which is only nine inches deep, and for this reason it is a mistake to have the box deeper.

Twelve inches is rather narrow for two reasons. The larger the surface or face the better the appearance, and in turn the higher the price. A flat box piles better in the storeroom or in a car, and carries better on a wagon.

I always press so as to have a bulge in the centre of the top and bottom and put a cleat on each end to protect this. The boxes should not be piled crosswise, as then the weight comes on the bulged part of the box and the fruit is bruised.

A uniform package is needed, but I hope the new box adopted by Parliament will prove more practical than the standard basket, which is too large for cherries, currants and plums. It is necessary that time be given to dispose of the old stock of boxes before the new law comes in force.

Fruit for Huron County

PROF. H. L. HUTT, O. A. C., GUELPH.

A Huron county correspondent asks for the names of five of the best plums, three cherries and three grapes for his district; also for suggestions as to what are the most rapid growing trees for shade to plant near the dwelling.

I would recommend the following five varieties of plums as most likely to give satisfaction: Burbank, Bradshaw, Imperial Gage, Lombard and Reine Claude. These are given in their order of ripening and cover the season fairly well. In cherries I would recommend Montmorency, Early Richmond, and Windsor. The following varieties of grapes are the best representatives of the three colors, red, white, and black: Lindley, Niagara, and Worden.

The shade trees which make the most rapid growth when young are not always the most satisfactory when old, or do not usually live as long as many of the slower growing trees. The Ash Leaf maple, or as it is sometimes called, the Box Elder, or Nagundo, is one of the most rapid growing shade trees, but it is not nearly so satisfactory after 20 or 25 years as the maple or elm. The soft maple is another rapid grower, and either of these may be planted for immediate effect, but I prefer to plant white elm or hard maple if soil is suitable, and wait a little longer for results.

Judging Fruit*

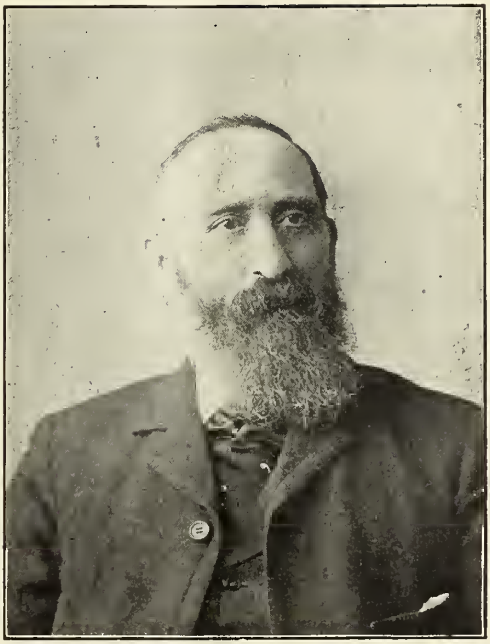
W. T. MACOUN, HORTICULTURIST, C. E. F.,
OTTAWA.

IN judging fruit one of the first defects to be looked for are blemishes. No fruit should be exhibited in competition for prizes that has a worm hole, bruise, spot or any other blemish unless it is impossible to get a specimen without such, or unless the blemish is very small and the fruit perfect in every other respect.

The uniformity of the specimens is equally as important as the freedom from blemishes. Irregularity is never attractive in fruit, and the specimen which attracts the eye on the dining table, in the shop window, and in the barrel or box is the specimen which approaches nearest the typical shape of the variety in question. Furthermore, the irregularity of one specimen gives an uneven appearance to the whole, and particularly is this the case when there are only five apples together.

High color is as desirable as uniformity, and it is difficult to decide just how far from perfect uniformity, highly colored fruit may be and yet score as high as a perfectly uniform plate with only fairly colored fruit. It is sometimes puzzling to the exhibitor to know just why a plate of apples receives a prize; but all these points are carefully weighed by the judge.

The time when size was considered the first essential in exhibition fruit has passed away, at least with the best judges, and large size is only preferred when the specimens are uniform, highly colored and free from blemishes, and equal in every other respect to those a little smaller. Apples which are of good size for the variety, and perfect in every other respect, will stand the best chance for first prize, as it is difficult to get large specimens which are as highly colored and as perfect as those a little smaller.



John M. Fisk

John Manson Fisk, President of the Quebec Pomological Society for 1905, was born at Abbotsford, P. Q., Dec. 13, 1836. As a boy he developed a taste for horticultural pursuits by sowing apple seeds and planting trees, andl after coming into possession of his father's farm, established a nursery, where many varieties of apples, pears and plums were tested, the trees from which now form the nucleus of many a commercial orchard in his native province. He was one of the originators of the Abbotsford Fruit Growers' Association, firmed in 1874, and which published the first fruit list for the province of Quebec in 1875, and ever since has been one of its leading members. The Pomological and Fruit Growing Society of the Province of Quebec was organized at Abbotsford in 1894, by representatives from different parts of the province, at which Mr. Fisk was elected its first president. Each year since he has taken an active part in the work of the society.

There is also a certain undefinable thing called "finish" about an apple which is regarded by the judge. This may be explained, in part, by a clearness of skin and a thorough maturity of the fruit. No better evidence could be given of the stability of the soil and the care in growing the fruit than the finish which the fruit has.

When comparing different varieties, quality, of course, should and does receive due consideration; especially is this the case when judging collections of fruit. In judging collections, however, the value of the varieties shown from a commercial as well as a dessert standpoint receives attention.

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*Extract from an address delivered at the last annual convention of the Prince Edward Island Fruit Growers' Association.

Undersized Baldwin Apples

"A GREAT many orchards, especially those in which Baldwin apples are being grown, are producing undersized fruit," said Mr. Joseph Tweddle to an editorial representative of The Horticulturist. "The question," continued Mr. Tweddle, "is what is the cause? Several years ago I was handling 10 or 12 orchards on shares. For two or three years parts of them bore some fruit, which was off in color and small sized, while others produced fruit of normal size and fair color. The trees in all the orchards were sprayed in the same manner.

"I found that the orchards which were in cultivation during the winter of 1878 and 1879, when so many peach and plum orchards and vineyards were destroyed by root freezing, were the ones which bore the small sized off-colored fruit. Those which were in sod that winter escaped the root killing and bore medium sized well colored fruit. When I found this out I commenced heading in severely the orchards which were root killed, and they immediately responded by vigorous growth. In my opinion that is what is the matter with many poor orchards. I now grow crimson clover and rye and vetch, and after it has served its purpose as a winter cover it is plowed under for a supply of nitrogen and humus. Some kind of crop is sowed every year for this purpose.

A Plum and Cherry Disease

T. D. JARVIS, B. S. A., O. A. C., GUELPH.

Something has happened to many cherry and some plum trees in this section. The leaves turn yellow and have brown or blackish spots on them. They finally fall off. I understand it is a fungous disease that is the trouble. What is the remedy ?—(E. C., Essex Co.

The fungous disease attacking the plum and cherry leaves is popularly known as the Shot Hole Fungus. It does considerable injury each year to the plum and cherry trees of Ontario. If the trees are sprayed in the early season with Bordeaux mixture it will reduce the disease considerably.

Wanted—A Fruit Commissioner

THAT leading fruitmen feel strongly regarding the action of the Dominion Government in placing the fruit division under the supervision of the Dairy Commissioner is shown by many forcible letters and expressions of opinion on the subject which continue to reach The Horticulturist. Here are two:

A. E. Sherrington, manager Bruce Fruit Growers' Association: Owing to the vast importance of the fruit industry, I believe that it is absolutely necessary that it should have a commissioner of fruit, who shall be entirely separate and distinct from the dairy division and who shall have entire charge of the fruit branch of the Dominion department of agriculture. It is important that we shall have a fruit commissioner through whom we will be able to come in direct touch with the Minister of Agriculture, which is impossible at present, owing to its being necessary for the chief of the fruit division to consult with the dairy commissioner in regard to all matters concerning the fruit industry. We should push this matter until our desires are complied with.

D. Johnson, president and manager Forest Fruit Growers' Association: The action of the Dominion Minister of Agriculture in placing the chief of the fruit division under the control of the dairy commissioner places the former in an awkward position. It seems to me that if the chief of the fruit division was brought in direct contact with the minister he would be able to do more for the advancement of the fruit industry, which is in a discouraged condition. The large quantities of fruit which go to waste every year show the great need of something being done to improve the fruit industry.

Other industries have been helped by the Dominion department of agriculture, and many of them have been put on a paying basis. The fruit industry with all its possibilities is being neglected as is shown by the action of the Minister in refusing to give the fruit interests a special commissioner. I am in favor of fruit growers uniting and demanding that the government give them a commissioner of their own and thereby recognize the great possibilities of the fruit industry.

Soot as a Fertilizer

PROF. R. HARCOURT, O. A. C., GUELPH.

What is the best way of using soot as a fertilizer? Should it be scattered on the ground or mixed with water and applied as a liquid?—(J. G. Goble, Woodstock, Ont.

Soot owes its value to the presence of a small and variable quantity of ammonia salts. The best house soots do not contain more than about 3.5 per cent. of nitrogen. They do not contain any appreciable quantity of potash or phosphoric acid. As there is such a small amount of fertilizing constituent in the soot, it would not pay to mix it with water and use it as a liquid.

All that is necessary is to sow it broadcast on the ground as a top dressing. It would possibly give its best results on grains, sown after the growth commences in the spring. I do not think it is rich enough in nitrogen to be an efficient manure for the horticulturist.

Direct Shipments

A LEADING Canadian fruit grower of the Hamilton district, who has recently returned from Great Britain, states that a number of the large wholesale commission firms in Great Britain are becoming disgusted with the auction sale method of purchasing their supplies of fruit, which is now followed in Great Britain. Several of these firms are anxious to get in touch with leading Canadian growers and with our cooperative apple growers' associations, that they may arrange for direct shipments of apples and other fruit. Two of the firms mentioned are those of Veitch, Moyer and Erskine, of Edinburgh, and Watson & Co., of Aberdeen, Scotland.

Firms like these claim that when they buy their fruit by auction they are unable often to select the kind of fruit they want or fruit that is packed in the way they would like They believe that if they can arrange with large Canadian shippers they will be able to obtain the fruit they would like. Some of these firms intend to send buyers to Canada.

Insects on Larch and Honeysuckle

TENNYSON D. JARVIS, B.S.A., O.A.C., GUELPH.

My larch trees are being attacked by some greenish caterpillar. These caterpillars are very numerous and in clusters. Many of the needles have a white downy substance on them. Some small insects, some of which have wings and some without wings, appear in white clusters on my bush honeysuckle. What are the insects which cause the trouble and the best methods of combatting them?—(D. M., Peel County.

The larvae that is attacking the larch trees is the Larch Saw Fly (Nematus erichsonii). I would advise spraying the trees with Paris green solution (Paris green four ounces and water 40 gallons). The white sticky substance to which you refer is likely the Larch Chermes, a very small insect common on the larch. This insect has a sucking mouth, and should be sprayed with kerosene emulsion. The clusters of insects on your honeysuckles are plant lice. These insects have sucking mouths and should also be sprayed with kerosene emulsion.

Spraying is an absolute necessity in order to attain success, and is very remunerative in return for the outlay required to make a thorough job of it. The question is how to get it done with the help at hand and keep up with other work. Power sprayers have appeared on the scene to solve this problem.—(W. H. Brand, Vinemount, Ont.

MARKETING SMALL FRUIT

IT is a season such as we have this year which tests the grower of small fruits. Many growers find little trouble in so caring for their bushes and cultivating their land that a fair crop results each year if the weather conditions are not too unfavorable. As a rule it is not difficult to find a ready market if the crop is not very heavy. But when a bumper crop comes the business ability of the grower is put to the test and that grower who is the shrewdest and pays the most attention to supply and demand on the different markets usually obtains greatest returns for his labors.

An attempt has been made by The Horticulturist to find out how some of the leading growers in the Niagara district sell their crops and from what markets the greatest profits are obtained.

"This year," said Mr. J. A. Pettit, of Grimsby, "there was good money in the home market for strawberries. I always sell my fruit to local buyers unless it is evident they are not paying enough. I also ship some. The Ottawa market suits me best, because it is handy to ship by Dominion express from here. I seldom sell to the canners and never make a contract with them. This year the canners have paid $1.32 per crate, but when they contract for many crates from certain growers they do not always get the best berries as the growers can make more money out of the best on the local market or perhaps by shipping them."

CANNERS PAY BEST.

"Selling berries to the canners," said Mr. J. W. S. Nelles, of Grimsby, "pays best all through. Many growers claim otherwise, but 'a bird in the hand is worth two in the bush.' In many cases if they ship to a distant market they are not sure what price they may get. Many buyers here have bought whole patches to ship. It will not be long until the buying will all be done at the growing point."

"For the Marlboro raspberry," said Mr. W. H. Spera, of Bartonville, "I find best money in selling on the Hamilton market. It comes in early and demands a high price. Sometimes I ship to Ottawa or Montreal if I find localities better located for supplying those cities have not a sufficient crop. As a rule, however, the home market pays best. There is more work, however, about supplying the home market, as when the berries are shipped all that is necessary is safe delivery to the train. The Cuthbert is firmer and a better canner and greater returns are obtained by selling it to the canners, as this variety comes in after the earlier varieties have lowered the price on the open markets.

MONEY IN CURRANTS.

"My land," continued Mr. Spera, "is specially suited to growing currants. I usually sell the red currants in Hamilton at about $1.75 per crate, but if the demand is not good there I look for other markets. I have shipped direct to Buffalo, and after paying freight and a duty of one cent per box, besides commission merchant's fees, have cleared over $1.75 per crate. Black currants generally bring 90 cents to $1 per 11-quart basket. For me the canning factory in Hamilton pays best because I have a big lot to sell. On the local markets a higher price might be obtained, but only 10 to 12 baskets could be disposed of at a time."

* * *

A great deal of fertilizer can be profitably used on strawberry plants if applied at proper intervals, as follows: In the early spring before planting, again late in the summer or early fall around the plants, and again in the winter or very early spring directly over them.

What interests me most in The Horticulturist is the names of the different kinds of fruit that do well in latitudes similar to Owen Sound. These articles are a far better guide in selecting fruit trees or plants than the fruit agent with his picture book. —(John Thomson, Owen Sound, Ont.

HARD TO GET PICKERS

GROWERS of small fruit generally find considerable difficulty each year in handling the crop. This is the case in most sections this season. The trouble was not very great with the strawberry crop, which was light in many districts, but now the respberries are in the trouble has begun. Growers have to use different methods to secure pickers, and many of these methods are far from satisfactory.

While talking to a representative of The Canadian Horticulturist who visited his place recently, Mr. W. Walker, of Grimsby, said: "It is very difficult to get pickers—in fact, we can't get good ones. Some growers bring in Indians from Caledonia, but perhaps they only stay at one place for a day or so. They are unsettled and sometimes other growers coax them away. I hope to get all my crop harvested without experiencing any serious loss, as I have the promise of about 40 pickers for odd days.

"The cost of harvesting a crop of berries often comes pretty high. We have to supply shanties or cottages for them after paying their fares on the train or car. Of course they board themselves. Some growers give a reliable woman 50 cents a day extra to oversee the job and secure pickers. The usual price paid for picking ranges from one cent to a cent and a half per box, depending on the variety."

"We simply have to do the best we can in getting pickers," said Mr. J. M. Metcalf, of Grimsby. "We can get a few from surrounding villages. A good plan is to go back on the mountain and bring down a load of farmers to help out. We pay one and a half cents per box for picking black and red raspberries and one cent for thimble berries."

"It is going to be a serious problem," said Mr. E. D. Smith, of Winona, "to get pickers this season. It is now some years since we had a heavy crop of raspberries. I suppose the best plan will be to make contracts for the berry season with a number of Indians from the reserve."

STRAWBERRIES FOR THE WEST

ONTARIO strawberry growers, it is the conviction of Mr. Alex. McNeill, chief of the Dominion fruit division, who has recently returned from a trip to the Pacific coast, will have to use more care in the growing and shipment of their fruit if they ever expect to build up a profitable trade with Winnipeg and western points. "When I was in Winnipeg in July," said Mr. McNeill to The Horticulturist, "strawberries from points in British Columbia were meeting with a ready sale. I asked one of the commission dealers how it was he did not sell Ontario fruit, and found he was a man with a grievance as far as Ontario fruit was concerned.

"This merchant informed me that he had ordered a car of Ontario berries to be delivered on Thursday, July 29. He showed me a telegram he had received stating that the fruit would not be delivered to him until Friday, and another telegram stating it would not reach him until Saturday, and finally a third telegram stating that the Ontario shipper would not be able to let him have the fruit at all. This promise to ship the fruit and the breaking of it had caused the merchant great loss, as he had relied upon receiving this car of fruit to fill his local demand and had been putting off his customers in expectation of the arrival of the fruit.

"I presume that the trouble with the Ontario shipper," continued Mr. McNeill, "was that he was unable to make proper arrangements for securing the fruit. The trouble in Ontario is that very little fruit is grown for export, as all that is shipped to the west is what little surplus is left over after the Ontario and Montreal demand is supplied. In Nelson, B. C., one grower is able to supply the local demand, with the result that all the other growers in that section bend their energies to filling the demand for the Winnipeg market and other cities in Manitoba and the Territories.

"Ontario growers might be growing three times as many berries as they do, but as long as they oscillate between the local and distant markets, without bending their energies to developing a profitable trade exclusively with one or the other it will be impossible for them to work up a first-class trade with the west. If they are going to work up such a trade it means that they must keep their business engagements, even if it sometimes means a loss to them to do so, as otherwise the buyers in the west will not have confidence in them and will be slow to give them orders.

"Ontario growers will have, also, to raise the varieties that will prove the best sellers, and pick and pack these berries especially for shipment. Only by definite work of this kind will they be able to compete with the British Columbia growers. One failure to fill an order has a worse effect with a buyer than even a shipment of poor fruit, as a small amount of poor fruit can be sold, if necessary, at a lower price, while if no berries are shipped at all the buyer is left in a bad position. When I was in Winnipeg British Columbia fruit growers were receiving $2 net per case for their berries."

LONDON PARKS

FOR a city of 40,000 inhabitants London is fairly well supplied with parks. The greatest need in the future will be small play grounds for the children. There is a movement on foot, inaugurated by Ex-Mayor Beck, to acquire small areas in different parts of the city to be laid out as playgrounds for children, so that we hope to have this need filled also.

VICTORIA PARK.

Within three blocks of the center of the city Victoria park is located. It has an

Flower Bed in Victoria Park, London, Ont.

abundance of trees, in fact almost too many. Its area is about 16 acres. Being easy of access, it is a favorite resort in the evenings and on Sunday afternoons and evenings. Very slight improvements had been made for many years till the season of 1904. In October, 1903, the city appointed J. S. Pearce parks superintendent, giving him full control and supervision of all the city parks, together with the trees on the streets and boulevards throughout the whole city. He was also given full authority to prune, cut down, or trim out any trees that were unsightly or out of place. Under his direction a vast improvement has been made. Some 1,600 trees were marked by him a year ago last winter. Nearly all these have since been cut down. The work was done by people out of employment and cost the city but little.

The new superintendent laid plans for a number of alterations in this park. The band stand was moved to a more suitable place. A larger flower bed was made near the center of the park. Some trees were cut out. Much of the old shrubbery was cleaned up or cut out and many of the flower beds were rearranged. These changes have so improved the appearance of the park as to cause the most favorable comment. The next step was to plant a lot of new shrubs, trees and perennials. The general appearance of the park can be judged from the cuts reproduced from photos taken during the cummer of 1904.

QUEEN'S PARK.

This park has been cleaned up and put in good order. Beds of flowers and shrubs have been planted. Further improvements have been made this year. A number of small plots have been cleaned up and trees and flowers have been planted.

SPRINGBANK PARK.

This park is situated four miles down the river at the city waterworks, and contains some 300 acres. It is beautifully situated, with hill and valley, stream and forest. It is a favorite resort in the afternoons and evenings during the summer months. It is under the control and management of the Water Commissioners, who are gradually improving it. The street railway have a double track into the grounds. Nature has done so much toward making this a

Greenhouse and Surroundings, Victoria Park, London, Ont.

park that man has only to clear the way, make roads and plant flowers.

The number of flowers and shrubs that can be used for park purposes is almost unlimited. Much depends on the locality, the size of the park, and other conditions. This should be left to the taste and judgment of the superintendent. For solid, bold effect nothing equals geraniums and cannas. A great deal depends on the location of the beds, their size, the arrangement of colors of bloom, foliage, etc. The success and appearance of beds, shrubbery, etc., depends altogether on the good taste and judgment of the superintendent or city gardener.

TROPICAL PLANTS WITHOUT A GREENHOUSE

HORTICULTURAL enthusiasts in different lines take great pride in producing something extraordinary. The orchardist frequently prides himself in having one tree bear many different kinds of fruit. The market gardener, by use of hot beds or greenhouses, thinks he has done well if he catches the early market and big prices with his cucumbers or tomatoes. Florists with their huge greenhouses filled with the latest heating appliances, rejoice if they mature some of the tropical fruits. But for genuine enthusiasm in plant growing the work of Mr. Walter T. Ross, secretary of the Picton Horticultural Society, shows something positively beyond the hopes of an ordinary horticulturist.

Without the aid of any extra heat except what he has in his house and cellar, Mr. Ross has grown with success numerous tropical plants. It would take too much space to enumerate them all. A representative of The Canadian Horticulturist, who called on Mr. Ross recently, saw a typewritten list of plants, which filled three or four pages.

" The last two or three seasons," said Mr. Ross to The Horticulturist, " have been poor ones for work with tropical plants. It needs a very warm summer to ensure success. It is no more difficult to grow tropical plants than any other kind. The only extra care that is required is to protect them from frost. Conditions as near as possible to their natural conditions in the south must be maintained. The greatest trouble I have is with the fruit falling off when it is quite small. Too much moisture or too much drought causes that.

" Those are my fig trees," said Mr. Ross, as he pointed to four fine healthy specimens in a row in his garden. " I always kept them in my cellar in tubs until last winter, but I thought I would try covering them outside. They were buried three or four feet deep and then brush was piled on top to hold the snow. When I took them out early in May they were quite healthy. The experiment was a success. I have four varieties which produce fruit of different sizes. There is no apparent flower but one fig comes in the axil of a leaf. I have promise of a fair fig crop this season," remarked Mr. Ross, as he pointed to numerous miniature fruits just forming.

" I handle the pomegranate in the same way," continued Mr. Ross. "The wood is soft like basswood and can be bent down readily when covering for winter protection.

" Sweet potatoes are also grown, as you will see by these vines. The young plants are secured from the south and set out in my garden when about five inches high. The potatoes are larger and whiter than the ones we buy in the stores and the flesh is firm and very white.

" Peanuts are easily grown. I plant the nuts in sandy soil. As the plants grow yellow blossoms appear low down on the stem. I pull the earth up around them gradually covering the blossoms and thus developing the peanuts underground. They need a warm sheltered place."

A Fig Tree Grown in Canada

One of the fig trees, seven or eight years old, grown by Mr. Walter T. Ross, of Picton Ont., is here shown. There are about five dozen figs on the tree. The variety is the Celestial or Sugar Fig.

Besides these Mr. Ross matures lemons and oranges and has some large specimens in preservatives which are better than most of the specimens of those fruits which appear in the shop windows of our towns and cities. A fine coffee plant stands in his office window and is as nice an ornamental plant as could be desired. Several curiosities in the form of carnivorous plants, known as Venus Fly Trap, which catch flies, are also very interesting. ThePapaw Tree, which has the property of rendering flesh tender, is also grown with success.

Among the many specimens not yet mentioned are pineapple, persimmon, ginger, cinnamon, vanilla plant and tapioca.

"I have never had a greenhouse," concluded Mr. Ross, "but there is an old saying that 'Nothing succeeds like success,' and perhaps my success on the start was the cause of my attempting so much. I always study the plant and find what conditions suit best. If I had a greenhouse I believe I could mature almost any of the tropical fruits."

When such success has been attained without glass structures what should we expect from some of our up-to-date amateurs and florists with their huge houses and perfect systems of regulating heat and moisture. Even the most sceptical would become an enthusiastic lover of plants after spending a half hour with Mr. Ross.

AN AMATEUR'S EXPERIENCE WITH TREE PEONIES*

THE Tree Peony (Peonia moutan) is found wild in China and Japan and attains in its native haunts a height of 40 feet. The appearance of a tree of this size, covered in the early spring with thousands of enormous single flowers of a faint rose lilac color, is surpassed in beauty only by the great magnolia of the Southern States. So remarkable a flowering tree must have attracted the attention of Chinese and Japanese gardeners. In the Flowery Kingdom the Tree Peony is called the King of Flowers. It is said to have been cultivated there for more than 15 centuries, and plants of choice varieties sold for more than their weight in gold. The first Jesuit missionaries who visited China sent plants to Europe, which attracted immediate attention and attained great vogue. Those who planned the stately gardens of France, which are now the délight and despair of new world visitors, contended for the dis-

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*A paper read at the July meeting of the Ottawa Horticultural Society by Hon. R. R. Latchford, of Ottawa, who has been very successful in the growing of these beautiful and rare flowers.

Tree Peony, Yukiarashi (Snow Storm)

From the Tokio Nursery Co. Enormous blooms nearly a foot in diameter. The most delicate silvery-white petals, tossing in lovely confusion; anthers bright gold. A flower of exquisite beauty and purity.

tinction of possessing a specimen of the tree peony, and plants were sold at 100 louis each. It does not appear to have reached England until the close of the eighteenth century, when it was imported from Canton by Sir Joseph Banks.

The continental gardeners greatly improved the type, and the Chinese varieties and some of the forms produced by Seneclause, Mouchelet and others are not surpassed by the most superb productions of modern nurseries. The opening up of commercial relations between the western world and Japan about 50 years ago, gave a new impetus to the cultivation of the flower. The Japanese gardeners had been quick to take advantage of the tendencies to variation which this flower manifests in cultivation, and had produced hundreds of forms, the best of which they ingeniously propagated. Those brought to England and the continent in the forms most favored were the single and semi-double varieties. They were brought to Europe in great numbers and when crossed with the older importations from China produced seedlings, the best of which have been selected by careful growers and are now available at reasonable prices.

In England a special impetus has been given to the cultivation of the flower by Messrs. Kelway & Sons. By intelligently directed crossing and selection they have produced varieties equalling, if not surpassing, the finest productions of continental growers. They catalogue upwards of 300 varieties, and while among these many eastern forms doubtless masquerade under new names, and others appear that are not any great improvement upon the older varieties, yet it must be conceded that many of Kelway's productions are veritable novelties of the highest merit.

The nurseries at Rochester, New York, many years ago distributed tree peonies of French origin. A plant there obtained was long a striking and beautiful object on the lawn of the late H. L. Loucks, in Wellington street, Ottawa, immediately adjoining the VanCourtland property. Its size and period of flowering—weeks in advance of the ordinary peony—attracted my attention, and annually when the plant was blooming I visited the garden to admire it. Mr. Loucks told me that he had no difficulty in bringing it through the winter. He simply inverted over it an empty barrel or packing case. When moving to a new house where he could no longer enjoy the delight of growing a few flowers he gave me the pride of his garden. I cut it back and divided it. One of the plants, now upwards of four feet in height and of equal diameter bore during May more than 150 enormous blooms. Roots purchased in Japan six years ago at trifling cost have bloomed profusely during the last two years, producing flowers of varied colors

Tree Peony, Kimomanotzuki—Moon-Peeping-Out-of-the-Clouds.

Typical of the single Japanese varieties. Rich glowing purple petals; bright yellow antlers.

from the most delicate satiny white through shades of pink, rose and crimson to the deepest purple.

The Japanese names are most fanciful and poetic. When preserved, as they should be, they add much to the charm of the flower. The finest white I have, a semi-double, rejoices in a name which translated is said to mean "Snow-storm." One bloom of this plant was by actual measurement 11¼ inches in diameter. Its size and the indescribable sheen and beauty of its petals contrasting admirably with the golden stamens combined to render it the finest flower without exception that I ever saw. A deep purple single flower variety is called "Moon Peeping Out of the Clouds." Other examples of Japanese names are: "White Lion in a Fury," "The Seven Gods of Happiness," "Snow Clad Fuji."

Any soil suits the tree peony, but of course it responds to generous treatment. The roots are very long and the plant is a gross feeder. The soil should, therefore, be deep and rich, and kept enriched by top dressings dug into the soil from time to time. It loves water, and copious drenchings before and during the flowering season will be amply repaid by increased size and substance in the flowers.

The only pruning necessary is to cut off the dead blooms and give shape to varieties inclined to be straggling. With ample room, however, the tree peony is naturally a symmetrical plant and requires but slight trimming. As the flowers are formed from the buds produced in the preceding year, the little pruning necessary should be done as soon as the blossoms fall. To prune in early spring will prevent any bloom during that season, and to prune late means simply the removal of the flowering buds. Propagation is usually effected by grafting in the spring on the roots of the herbaceous peony. They may also be propagated by division, though this is not advisable, as the plants dislike being disturbed, and by layering, which is comparatively easy. Regard must be had in putting down layers to the brittle nature of the wood, and great care is consequently necessary in bending down the shoot intended to produce a new plant. The season of blooming is coincident with the old-fashioned peony, *P. officinalisis,* and precedes by nearly two weeks the not less gorgeous *P. sinensis,* which are the pride of our gardens in early June.

The tree peony may be as easily grown in Canada and Eastern Ontario as the herbaceous varieties. It is equally hardy if given close and dry protection. It may be had cheaply, and in almost infinite variety. It is magnificent in foliage and flower, yet it is unknown except in a few gardens. In the hope that it may be more widely grown and add to the delights that flower lovers alone know, I have ventured to bring it specially to the notice of the Ottawa Horticultural Society.

CHRYSANTHEMUMS IN AUGUST

GEO. HOLLIS, BRACONDALE, ONT.

THE month of August is a busy one for chrysanthemum growers, especially for those who raise the early varieties, such as Fitzwigram, Bergman, Monravia, Kalb and Opah. The buds of these early sorts can be taken after August 12. These early buds are crown buds, and it is a good plan, when putting the growths out, to leave one shoot beside the bud for a day or two to draw the sap up and make the bud plump. Should the bud not swell you will then have another chance.

Wires running the length of the bench, in a line with each row of plants, and a string from top to bottom for each plant, the string being given a twist around the growths, make a good support for single stemmed plants.

Keep the benches free from weeds and the plants well syringed with tobacco water for insect pests. If fumigation is practiced do not overdo it, as the leaves burn very easily. Give manure water once a week, as recommended last month, but a little stronger for the early varieties. Pot plants outside should be well watched for the chrysanthemum fly, which makes its appearance this month. If the plants are stung by the fly you will have only one sided flowers. Cover the plants with cheese cloth, or take them inside. Tobacco smoke keeps them away.

A TORONTO ROSE GROWER'S METHODS

AN unusual method of growing roses in the greenhouse is followed by Mr. A. J. Frost, of Preston avenue, Toronto, who, instead of renewing his stock every two or three years, as most growers do, has not renewed his stock for over 10 years.

"It is so long since I started any young roses in my greenhouse," said Mr. Frost to a representative of The Canadian Horticulturist, "that I scarcely know how frequently I change my stock. What I have now have not been changed since 1893. They were planted in 1892 and then replanted to where they now stand in July, 1893. The bloom was excellent that season, and during exhibition weeks I cut 400 to 500 per day. They have been just as good ever since, and I intend to leave them as they are just as long as they yield me as great returns as they have done each year.

"I have bloom to cut the whole year round," continued Mr. Frost. "When the other growers are setting out new stock I cut 50 to 100 off two benches each 110 feet long. The profit from the same bench space in 12 months is almost double that obtained from methods of rose culture commonly employed. I cut 25 to 30 per cent. more bloom and have it at all seasons. Of course, naturally, they do not bloom so freely during the winter months.

The chief trouble in growing roses is the regulation of soil and air temperatures. With the solid bed the soil temperature very frequently goes much higher than the temperature of the atmosphere. This causes rapid growth of the roots, but the stem growth is checked. I now aim to have the temperature of the soil practically the same as that of the air in the house. A temperature of 58 to 60 degrees in winter gives the best results. To have the air temperature slightly higher is not objectionable. Instead of that, however, many growers have the soil temperature much higher. Low temperature gives high quality of bloom but short stems and low quantity.

"Before I started into business for myself I decided that florists did not use the most economical methods in growing roses. I thought that since out-door roses did not need to be renewed each season, those

Greenhouse in Which Mr. Frost Grows Some of His Roses

grown in the greenhouse should do well when treated in the same way. I have tested this method for 13 years and shall not go back to the old way."

"What do you do with the old wood?" was asked. "Every third year," replied Mr. Frost, "I go through and cut out all but the strong young shoots. This leaves a healthy bed of young plants which keep on blooming. I usually do the pruning in July, but last year I pruned one bench in January when the crop was off, and it did as well as others pruned in the summer.

"The work connected with rose growing in this way is very light. Each year in July I add about one inch of cow manure and a moderate dressing of bone meal. Then there is the usual work which is needed in caring for benches. My experience," concluded Mr. Frost, "has taught me that it is wise to leave a crop as long as it is paying well. These roses will stay as they are until I see they have ceased to bring handsome returns."

CANNING SITUATION IN PRINCE EDWARD COUNTY

IN Prince Edward County, Ontario, a great number of the tillers of the soil depend on truck farming for a livelihood. Perhaps more canned goods are put up in this county than in any other county in the province. Prince Edward growers supply the raw material for nine factories, all located within the borders of that county. They also furnish the greater portion of what is canned in two factories just outside the limits of the county. The fact that four new factories have been built within the last two years gives some idea of the increasing importance of the canning industry to the growers.

"In Prince Edward county," said Mr. Wellington Boulter, of Boulter & Sons, Picton, to The Horticulturist, "the total value of goods canned each year amounts to somewhere in the neighborhood of $1,000,000. Of course it depends on what Nature gives the grower."

"There has been a marked increase in the number of acres devoted to truck gardening this season," said Mr. Earl Spencer, of Picton. "This increase is to supply the new factories which are going up. The acreage of canned stuff has doubled in the last few years."

"The old factories are holding their own growers," said Mr. J. E. Terrill, of Picton, "and the four new factories which have started within two years back are being supplied by new growers."

"It is hard to estimate the total number of farmers who supply the raw material for these factories," said Mr. A. H. Baker, manager of The Old Homestead Canning Co., of Picton. "We have made contracts with 118 pea growers alone. Each of the nine factories would easily average over 100 growers. The number of acres grown is increasing rapidly each year. The producers are more numerous and the old growers are supplying more than they did."

With such a large percentage of the rural population engaged in this work it is not surprising that the situation between growers and the canners combine, as elsewhere in Ontario, should be somewhat acute. Information gathered by a representative of The Canadian Horticulturist who visited that county recently shows clearly the conditions existing. The majority of the factories are in the Canners' Combine, which syndicate has huge factories in different parts of Ontario. Some of the factories are independent concerns, who have been having an up-hill fight against the combine. The agitation for 30 cents per bushel for tomatoes and the refusal of the combine to pay that price augmented the already strained conditions.

"In districts where the combine has opposition," said Mr. Baker, "they raise the price so as to out-do the independent factories, but in sections where there is no independent factory they pull the price down to make up for the extra price paid in the other sections. Where the independent factories pay five cents per box for berries the combine go around and offer six cents, while in another section, without opposition, they refuse to pay more than three and three-quarter cents. In this way they try to whip the independent factories into their camp. Last year there was a surplus of peas and the combine lowered the price until it scarcely paid for production. While we may lose a little they lose a whole lot. They will have to repeat these practices many times, however, before they will be able to put the independent factories out of business."

FACTORY OF THEIR OWN.

In the Bloomfield district the refusal of the combine to pay 30 cents per bushel for tomatoes caused a number of the leading growers to take decided action.

"During the past five years." said Mr. J. W. Hyatt, of West Lake, "the canners' combine have practically controlled the canning industry. They control the production of raw material and the manufactured product. Of late they have been controlling the price as well.

"Farmers should be only farmers. They should not be millers nor canners. But the cost of labor has increased 25 to 50 per cent. and growers should receive more for the raw material than they have been getting. The canners refuse to give more. What will be done if we surrender? Next year they may lower the price. The longer we wait the worse off we will be.

"After considering this important question carefully," continued Mr. Hyatt, "the growers around Bloomfield decided that their interests would be served best by forming a cooperative company. As a result The Farmers' Canning Company, Limited, of Bloomfield, has been organized. A number one factory with first-class equipment and a capacity of 20,000 cans per day is being built. This year we will can our own tomatoes and corn.

"Tomatoes grown in Prince Edward county are unequalled for quality and flavor. We were dissatisfied because many tomatoes of poorer quality and flavor grown in other sections of the province were being branded with the Prince Edward county brand. The same is true of peas. Prince Edward peas are unexcelled. The syndicates in many instances put up inferior goods which hurt Canada in regard to the canned goods trade. Many growers saw that truck farming was about to be ruined.

This was another reason for our determination to have a factory of our own.

"It has been reported that the syndicates will sell below cost and so put us out of business. But The Farmers' Canning Company is composed of about 40 shareholders who are growing the raw material, and we can hold back our goods for five years, if necessary, until a paying price can be obtained. We are going to put up only the best and work back to the old standard," concluded Mr. Hyatt.

"The farmers were late in starting the agitation for 30 cents per bushel for tomatoes this season," said Mr. Spencer. "Next year they will be able to get the 30 cents all right, but they will have to supply a better quality of goods. Canners now contract for the crop at 250 bushels per acre if they want them. In case they don't want them the farmer is left to do whatever he likes with the crop. When the crop is light everything is all right."

"We can not afford to pay more than 25 cents per bushel," said Mr. Baker, "unless all the factories do the same. But there is no crop on the farm pays so well as a crop of tomatoes at 25 cents. An average crop is 250 bushels per acre, and very frequently they run two or three times that much. Last year one man had 800 bushels and that was in an unfavorable season.

"The natural feeling among the growers is that a higher price should be obtained, but an average season gives them returns far above mixed farming or dairying. If the price is raised for the raw material the next move will be a higher price to the consumer and smaller sales as a consequence."

GROWING EARLY VEGETABLES IN ESSEX COUNTY

THE forcing of vegetables for the early markets and their growth for canning purposes is rapidly becoming a very important industry in Essex county, Ontario, especially in the Leamington district. Thousands of dollars are being invested in greenhouses and in the other equipment required. Most of the people growing vegetables were extensive fruit growers until the last few years. The severe winter of 1903-4 which destroyed many orchards in this section forced many of the growers to turn to vegetable growing. In this they have been so successful the acreage has been steadily increased, although some of the growers are again turning their attention to fruit growing.

A grower who has invested a large amount of money in the growing of vegetables is Mr. J. D. Fraser, of Leamington, with whom The Horticulturist recently had an interesting interview.

"Owing to the freeze out in my peach orchard twice within four years," said Mr. Fraser, "I have been compelled to enter rather more largely than I should otherwise have done into the growing of tomatoes, musk melons, cucumbers, and other vegetables. I still hope, however, to make a success of peach growing, as I firmly believe, apart from the above danger, that this section is second to none for producing this particular fruit. The tops of the trees do not get frozen, only the roots. This has been due to an insufficient covering of snow, as is shown by the fact that after the damage had been done by the frost the trees came out in leaf and bloom and then wilted away.

"For many years previous to the winter of 1899-1900 peaches were grown here very successfully with clean cultivation. After the loss caused by the cold weather of that winter we practised clean cultivation together with a cover crop sown in July or early August, but could not get anything to form a sufficient protection to take the place of the snow.

"In the winter of 1903-1904 many of the orchards that had been replanted were again frozen. In sections of the United States where they have had the same difficulty to contend with, they are using a coarse mulch applied directly to each tree. We are now planting our new orchards 16 by 24 feet apart, and with this plan hope to work a strip in the centre of 10 or 12 feet in width, keeping a sufficiently heavy mulch on the balance to hold the moisture. This, in connection with the heavy cover crop on the cultivated strip, that nearly always grows rankly at a distance from the trees, ought to afford ample protection. I hope in the future to work vegetables in with my fruit growing rather more than I have hitherto done, and under the foregoing conditions expect to make fruit as profitable as vegetables.

"We grow tomatoes chiefly, also cucumbers and musk melons. This year, aside from growing the supply for our own needs, our growers had over 250,000 tomato plants under contract for canning factory purposes. These were transplanted but once. My own planting included 3,000 cucumber plants, 14,000 Earliana and 20,000 Stone and B. B. tomato plants, and 10,000 mellon plants. We ship to commission men in the cities, many of whom we find reliable, although on the start I had dealings with some who were quite the reverse. We also ship more or less to about 80 towns in Ontario, including a few in Quebec, Manitoba and Nova Scotia, where we deal direct with the retailers at a quoted price. The cities we ship to include Winnipeg and the cities of Ontario and Quebec.

"The greatest competition from southern growers is at the winding up of their season, when they send their fruit into the Dominion, under, as I am given to understand, some arrangement with the railway companies whereby no charge for freight is made if the price realized does not make it up. We fruit and vegetable growers of Canada should follow the example of the

An Interior View in One of Mr. J. D. Fraser's Greenhouses, at Leamington, Ont.

This greenhouse is 168 feet long by 31 feet wide. In it a large number of tomato plants and other vegetables were started this spring for the early markets.

Manufacturers' Association and see that our interests are protected along these lines. Owing to our geographical position our neighbors to the south have the advantage, as their early stuff always brings a price sufficient to enable them to pay the present manipulated low tariff, and by the time we can compete in their markets the price is such that we cannot afford to pay the duty, consequently we are not working on an equitable basis.

AN IMPROVED GREENHOUSE.

"With the old system of greenhouses, ordinarily in use, I found that the getting in and out of the soil, which has to be changed so often owing to the different crops being moved out either to hardening houses or the fields, took too much labor, as the stuff had to be carried or wheeled in and out through the ends. This led me to experiment, with the result that I have so changed my greenhouse that I can now drive a team along the side and shovel the soil right into the beds. When removing the plants the same saving of labor is effected. This kind of greenhouse cuts the labor to about one fourth. The side sashes create a current of air in connection with the top ventilators and make it possible to work inside on a hot day nearly as comfortably as in the open. I also find that the more thorough ventilation thus secured produces far better plants than under ordinary conditions.

"In the earlier stages we have tomatoes and cucumber seedlings in the house together, and as they advance in growth gradually work them out into the smaller and cooler houses under cotton and glass. The smaller houses are mostly covered with glass that can be opened easily on suitable days for hardening off the plants previous to setting them out in the field. Glass being rather expensive we aim to keep the benches in the house steadily in use. As soon as the plants are large enough and are removed from the large house we plant out cucumber or other plants in the greenhouse to produce a crop for the market.

"I had a visit recently from Mr. Robt. H. King, engineer for the King Construction Co., of Toronto, who was much interested in my plant and buildings. Mr. King was especially pleased with the ventilating sash as used on the sides of the larger greenhouse, which he considered is a new idea."

SPINACH BEFORE TOMATOES

"I GENERALLY run spinach on the ground intended for tomatoes," said Mr. Wm. Waller, of Bartonville, to The Canadian Horticulturist recently. "For an early spring crop I sow the seed in the latter part of August or early in September. This gives a crop of spinach ready for market by the last of April. In this way I get two crops off the same ground in one season.

"The spinach seed is sown in drills about 14 inches apart. By the time frost comes the plants are about in the fourth leaf. They should be protected during winter by a covering of straw, old tomato vines or a similar covering that is not too heavy but still holds the snow well. It should be planted on high dry soil, because wherever water lies it would be winter killed. A heavy sand loam suits best. When the covering is removed in the spring it comes on rapidly with the first warm weather.

"There is also a spring spinach," said Mr. Waller, "which can be sown in the spring as soon as the frost is out of the ground. If kept well cultivated this crop is ready by May 24. Most of this vegetable grown here finds ready sale on our local market, but sometimes it is profitable to ship it to Montreal or some other city."

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LESSONS IN PACKING.

The Department of Agriculture, Ottawa, is to be congratulated on having secured the services of Mr. B. T. Boies, of the Coldstream Ranch, Vernon, B. C., for the purpose of giving instruction in fruit packing in eastern Canada. Mr. Boies was selected by the Coldstream Ranch in British Columbia as head packed, as he had had several years experience in California, Washington and Oregon. He is therefore, properly fitted to give pointers in the very latest and best methods in fruit packing before even the best fruit growers in Ontario, Nova Scotia and other provinces.

It is the intention of the Department to have Mr. Boies visit various parts of the Maritime Provinces, Quebec and Ontario, giving demonstrations in the packing houses in the large centres, and probably overseeing what may be termed classes for beginners in box packing in the various fruit districts. The exact itineracy has not yet been planned definitely, but will probably be announced in our next issue. It is to be hoped that this will lead to much more extensive work another year.

In no department of fruit growing is the eastern grower at greater disadvantage than in the matter of packing and grading. For want of proper attention to these points eastern Canada is losing a most profitable trade in the northwest, and is obliged to take an inferior price for her best fruit in the foreign markets.

THE MARKET GARDENERS' CHANCE.

During August leading members of the Ontario Vegetable Growers' Association will visit the principal cities and towns of the province in an effort to form branches of the association. The leading market gardeners in the sections visited should give these delegates a cordial reception and should do all in their power to assist in completing organization in their districts. There will be many growers who will hold back and refuse their assistance for fear the stranger is after their money. These men will require patient handling.

The idea of a strong provincial association is so new to market gardeners it may prove difficult at first to convince them of the need for such an organization and of the benefit it will be to them. One of the best methods of reaching these men will be by explaining that instead of wanting their money the desire of the association is that they shall share in the grant the Ontario government has made for this work. No industry is in greater need of better organization than that of the vegetable growers. May success crown the efforts of those who will this month endeavor to secure this organization.

THE SAN JOSE SCALE.

The announcement by the provincial inspector, Mr. J. Fred. Smith, that the San Jose scale continues to spread in Ontario and that new districts are being infested calls for action of some sort. A serious feature of the situation is that now the panic the scale caused a few years ago has subsided it is difficult to arouse growers to the seriousness of the situation.

The proper enforcement of the laws already in effect would do much to prevent the further spread of this destructive pest. Growers who refuse to destroy trees that have been ruined beyond hope of redemption should be forced to do so. A few actions in court, such as those tried at St. Catharines last year, would have a beneficial effect. It is not likely that the scale will ever be completely driven out of Ontario, but this should not prevent the taking of steps which will help to make it impossible for the carelessness of some growers to result in serious injury to their neighbors.

The truth of the adage that big results from little causes flow is borne out by the case of the Oakville Basket Company, of Oakville, Ont., which last January signed for eighteen dollars' worth of advertising space in The Horticulturist. This month The Horticulturist has received an application from Smart Bros. of Collingwood, Ont., for one of the handsome prizes we offer to readers who buy goods from our advertisers, this firm having purchased $442.82 worth of baskets from the Oakville Basket Company through seeing their advertisement in The Horticulturist. The Oakville Basket Company, writing about their advertisement, say: "We have received several orders from having the advertisement in your paper, and have two or three customers who intend to submit their names for some of your premiums, including Smart Bros., of Collingwood, Ont., and Auguste Dupuis, Village des Aulnais, Co. L'Islet, Que." How is that for an example of a small advertisement and large returns. A check for five dollars has been sent to Smart Bros., and a prize will also be given to Mr. Dupuis if he applies for it.

We regret to have to warn our readers against doing any business with the Indianapolis Nursery Co., Indianapolis, Ind., which had a full page advertisement in the April and May issues of The Horticulturist. This advertisement was accepted by us in good faith and we, therefore, regret to learn from some of our readers that they have sent orders and money to the company without receiving any response. In some cases their communications have not even been acknowledged. Another suspicious circumstance in regard to the good standing of this company is that it has not paid for its advertisement. The Horticulturist, however, expects to have a few bad accounts each year. Its greatest regret is that its readers should have suffered loss. We know all the advertisers we are now dealing with to be thoroughly reliable.

In spite of the fact that a large number of extra copies of the June Horticulturist were printed our supply has become exhausted. The relatives of the late R. W. Lloyd, of Deseronto, whose portrait was published in that issue, would like some extra copies of that number. Our readers who can spare their June numbers will confer a favor either by mailing them to this office or to Mr. D. McClew, the president of the Deseronto Horticultural society.

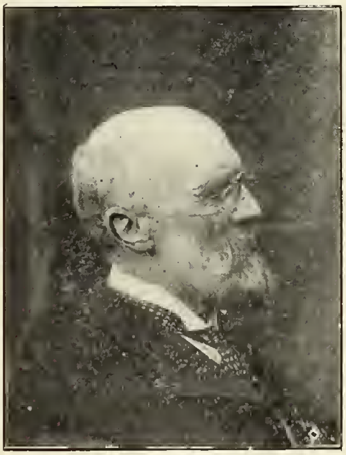
The members of the Canadian Horticultural Association always manage to work a great deal of fun and profit into their annual conventions. Here's hoping that their annual convention in Montreal this month will be the most enjoyable and profitable in their history. Professional florists should not miss these meetings.

Items of Interest

The members of the Toronto and Hamilton branches of the Ontario Vegetable Growers' Association will hold a joint picnic at Burlington Beach, August 16. Several hundred will go from Toronto, and it is expected the attendance from the Hamilton district will be about equally as large. There will be a program of sports and a fine time is assured for all.

A movement is under way whereby a number of cars of mixed fruit, carefully picked and packed, may be forwarded to Winnipeg during this coming fruit season, with a view to testing the various types of refrigerator and ventilated cars, as to their respective advantages in carrying fruit a considerable distance, and these cars will be under careful supervision from first to last and every condition and circumstance noted that might be likely to affect the fruit in any way. It is expected to commence shipping the latter part of August and continue the shipments from St. Catharines and points west as far as Hamilton during the season as may be found expedient.

Toronto's Sad Loss


EDWARD TYRRELL.

The members of Toronto Horticultural Society were greatly shocked to learn on the morning of July 18th of the death of their well-known ex-president, Mr. Edward Tyrrell, of Toronto.. Mr. Tyrrell was apparently in perfect health and about an hour before his death had been in his lovely garden with his flowers, of which he was a great lover and out of which he took much pleasure and pride. Mr. Tyrrell was 68 years of age, and was for three years president of the Toronto society, for which he did much. Many readers of The Horticulturist became acquainted with Mr. Tyrrell through the series of interesting articles written by him, entitled "Flower and Plant Lore," which appeared in this magazine. Early in June The Horticulturist had a visit with Mr. Tyrrell, who was very enthusiastic at that time regarding a larkspur in his garden, which he had planted and which had attained a height of considerably over 6 feet, with a flower spike over 12 inches long. Mr. Tyrrell's presence will be greatly missed at the meetings of the society. Among those present at the funeral was Hon. G. W. Ross.

Fruit Crop Notes

A report from Mr. W. H. Dempsey, Trenton, on July 25, states that the apples are dropping badly. Also the leaves have been attacked by a fungous disease which causes them to turn yellow and fall. The fruit, however, is clean.

Mr. C. W. Neville, of Newburgh, says that the quality of fruit in Addington county promises to be good. Pears are a failure except the variety, Louise Bonne, which is well loaded.

From Nantyr, Simcoe county, Mr. Stanley Spillett reports that Pewaukee apples are falling off.

Rev. Father Burke, of Alberton, Prince Edward Island, reports that this is an off year for apples. They are not more than half crop. Pears are medium and plums light. Spraying has been pretty general and insects and fungous diseases not in evidence.

TRADE NOTES FOR PROFESSIONAL FLORISTS

The Montreal Convention

The Canadian Horticultural Association Convention, at Montreal, August 8, 9, 10 and 11, promises to be “vaster than has been,” and it goes without saying that it will be enjoyable. Montreal is an ideal place for an “ornamental horticulturist” to visit on account of the many beautiful gardens, as well as the grand natural scenery, the view from the top of the mountain being a sight that no Canadian should miss.

But in looking forward to the entertainment part of the convention florists must not forget that there is important business to be transacted during the four sessions devoted to the interests of the profession, and every one who has these interests at heart should make a special effort to attend. In these days “the butcher, the baker, the candlestick maker,” etc., etc., all have “conventions and things” and reap no small benefit thereby ; surely our profession should not lag in the rear of the grand procession. The country is prospering and making money, M. P.'s and Senators have got a raise, and there should be a little more going to the florist, seedsman and gardener in consequence, if they are not too backward in putting themselves forward. Then Ho ! for Montreal. For programs and information apply to A. H. Ewing, Woodstock, Ont.

Woodstock's Gardens

Mr. H. G. Doyle, who lately sold his greenhouse plant to Mr. J. Dickenson, has started to put up two houses near his old stand. The King Construction Co. are supplying the material with all their latest improvements.

The gardens surrounding the residence of John White, Esq., on Vansittart avenue, have been much enlarged and improved and have quite a metropolitan appearance. Mr. Greig, the gardener (a late arrival from Scotland, and thoroughly experienced), deserves great credit for the good work done in so short a time.

“Altadore,” the former residence of the late Hon. James Sutherland (now of H. A. Little, Esq.), is looking its best. The large quantity of trees and shrubs planted two years ago are beginning to show up, and the late rains have made the large expanses of lawn look their greenest. This is really a beautiful old place, and no visitor to this city should miss seeing it. Four men are employed in the gardens most of the summer. A horse-mower and two hand mowers cut the lawns, etc., in a day and a half. This spring and early summer the grass has all been cut twice a week, some of it three times. There are, also, about two acres of kitchen garden and an acre of orchard, besides shrubbery, pasture, etc., 22 acres in all. There are many very pretty and well kept smaller gardens in the city, and as the horticultural society is in active operation, the people are well supplied with information, novelties, etc. Mr. James Hoare goes in for roses and grows them nearly as fine as they do in the old country. Mr. R. Woodroofe goes in for gladiolus in large quantities and grows nothing but the best. Some of these days the Canadian Horticultural Association will have to pay a visit to Woodstock.—(A. H. Ewing.

Montreal Notes and the Convention

The usual summer dullness in trade is on us now in earnest, with the thermometer hanging around 90 degrees every day and a great amount of humidity in the atmosphere. It is impossible for trade to be any other way; everybody who possibly can is out of the city trying to get a cool breeze and not thinking of buying flowers. But whilst the store men are taking a rest the growers are as busy as possible building, mending, etc.

Roses are growing fine, this weather just suiting them. Chrysanthemums are all planted and doing splendidly ; fewer varieties than usual are being grown, but in larger quantities. Carnations have done well in the field this year, and housing will start in earnest next week. A few asters are to be seen in the stores, but outdoor asters are late. Up to the present they are not showing signs of the yellow, and the bug is not as plentiful as usual.

But, if trade is quiet, the convention committee is very lively. They have everything well under way, and a pleasant and instructive time is assured for all the delegates. Reports from the different cities promise a large attendance, which is the only thing required to make the convention the success anticipated. We would like to impress on the delegates the advisability of staying over the four days. The fourth day will be given up entirely to visiting the private places for which Montreal is renowned. The owners have signified their willingness to allow their places to be thrown open to the members. The Montreal Gardeners' and Florists' Club will pay all expenses for that day. The banquet has been arranged and the tickets will be $1.00 each.

The railway rates are the same as last year, viz., fare and one-third if more than 50 delegates attend. I would like to impress on all attending the necessity of travelling by rail and taking a certificate. It will be far more to their advantage to spend the extra day in Montreal rather than spend the time on the boat, at the same time helping their brother delegates to get a reduced rate.——(G. A. Robinson, Montreal, Que., July 24.

The Trade in London

Routine work is progressing favorably. Chrysanthemums are all planted and the crown buds on “opah” are swelling fast. Present indications are that the flowers will be ready for cutting by the first week in September. Others of early kinds are growing fast, such kinds as Bergmann, Geo. A. Kalb, The Pacific Tribe, Omega, Amorita (the very best early pink), are climbing fast. Carnations in the field are anxiously looking for a drink, but the very favorable weather all through the early part of the season gave them such a splendid start that a moderate drouth will do them little harm. Sweet peas are remarkably dwarf in this vicinity, but the flowers are good and moderately plentiful. I hope later to be able to give comparisons of some of the best varieties. Asters are fairly plentiful. Queen of the Market is about the only one for which we have any demand. Perennial phlox is appearing in quantity all over the city. This class of plants is getting very popular.

DISTRICT NOTES.

Mr. H. L. Jansen, of Berlin, has his place in excellent condition; probably the **features are** two houses of tomatoes and two houses of cucumbers in full bearing. Mr. Jansen reports an excellent market for these products. Chrysanthemums are looking fine, the early ones especially being well advanced. Carnations are grown partly in the field and partly inside. Both lots of plants are looking well. The Boston ferns in 5 and 6-inch pots are the best seen for some time.

Mr. Wilson Iler, the apairy specialist, has a most extensive and lively stock in this line. His greenhouses are filled with a miscellaneous stock in good condition.

Mr. G. L. Peltz, of Preston, is also looking well and reports the late bedding trade as excellent. It is worthy of note that red and crimson geraniums were invariably scarce in this district the past season.

Mr. John Wells, of Galt, has a collection of Rex begonias that is most complete. A limited number of big specimens grown especially for the local exhibition are magnificent.

THE CANADIAN HORTICULTURAL SOCIETY.

I had the pleasure of receiving a letter from my old friend Mr. Geo. A. Robinson, president of the Canadian Horticultural Association, on convention matters. He tells me the meeting will be a banner one, and I can quite believe him. I also had a letter from another old friend on Lake St. Louis. He says they are contracting for a supply of ice to keep the boys cool, and amongst other things that they have a newly imported Scotch plant down there called "The Epicure," that the committee is to report on. We shall all be glad to see it. I also got the information that the Montreal growers were going to try and lift the Toronto chrysanthemum cup this year. Wonder what they want to butt in for.

In reference to transportation, the London delegation will go by boat from Toronto. I have to go that way. My wife won't let me go by train this time, and it's all Willie Hall's fault. We shall leave Toronto on Saturday and arrive at Montreal—later.

Of course our friend Tom Manton will be along. Recollect the Montreal "bounce," Tom, and take a spare pair of trousers along this time.—(Fred. Bennett.

Some Perennials of Note

Charles Webster, of the Webster Floral Company, Hamilton, says: "I consider Campanula Persicaefolia Moerheimi the most meritorious perennial of recent introduction. In comparison with the variety Alba Grandiflora Plena it is a great improvement. The flower stems are clothed with flowers from top to bottom. Each flower is large and as well formed as a camellia. It is the strongest growing variety grown in this section.

"The little Thrift (statica Armeria) is beautiful at this time of year for borders, or, in fact, in any position where the surrounding plants are not too tall. Having noticed that some of the plants raised from seed come a washy pink color, I am now propagating by divisions from bright colored plants only. Sedum Maximum (Atra purpureum) reminds one in general growth of the Sedum Spectabile (Live-for Ever), but it is stronger and larger growing and the foliage is brilliantly colored, sometimes crimson and sometimes dark maroon. It seems to be hardy anywhere.

"The Gaillardia Grandiflora has in recent years undergone development not unlike that seen in the Cactus Dahlias. Some of the flowers are oddly quilled, but none of the varieties seem to take as well as the large, broad-petalled flower, showing plenty of crimson coloring. Two shrubs which are worthy of note are Acacia Hispida, commonly known as the Rose Acacia. It is perfectly hardy here and its large clusters of pink sweetpea-like flowers make it one of the very prettiest shrubs. A little pruning is necessary to keep it in symmetrical shape, but it well deserves a lot of attention. Weigela Eva Rathke is a beautiful red variety and fully merits every word of praise which has been given it. It is hardy, as dark in color as the variety Lavali, but it is a clear crimson with well opened flowers, which show the color well. It is too bad that the beautiful Weigelas are not hardy in northern Ontario and the west. They are certainly among the very showiest shrubs that can be planted."

Toronto Florists

"The season has just opened for asters and gladioli," said Mr. H. G. Dillemuth to The Horticulturist. "They are coming in fine. Weather conditions have been favorable and these flowers should be good all season. Roses are scarce, and what do come in are a small grade of inferior flowers. Carnations are fairly good but are being replaced by asters. Lilies are plentiful. They are being grown more extensively than ever before in this section at this season. Lilium speciosum, Lilium album and Lilium roseum are all good sellers.

"There has been a great run on centaurea this season. These beautiful flowers appear in white, mauve and yellow shades and are very saleable. Sweet peas are excellent and in good demand. Local growers are busy getting carnation plants in from the field. The young stock has made good growth and the plants are in fine condition."

TRADE DULL.

"Trade has been somewhat dull," said Mr. J. S. Simmons, the Yonge street florist. "Funeral orders form the bulk of the trade now. Asters, lilies and sweet peas are the main stock. Gladioli are coming in. The specimens are excellent but not abundant. The centaurea is a lovely flower and well liked by some, but there is not a heavy run on it as it does not last long. It is a one-day flower, maintaining its freshness about the same length of time as the summer carnation."

NOTES.

D. J. Sinclair reports business better than is usual at this season, owing to the demand for funeral flowers and from the hospitals, etc. Gladioli are coming in in quantity and the demand is brisk. Asters are in fair supply, mostly white. Carnations are off owing to many of the growers having replanted. Roses are out of season. What are coming in are very inferior, with the exception of some very fine Kaiserine. Peas in good supply.

D. J. Sinclair intends making an exhibit of supplies at the Montreal convention.

E. Crowhurst, of Mimico, is sending in the finest asters seen in Toronto.

Geo. Gard is cutting some very fine Lillium Aratum.

Grobba & Wandry, of Mimico, are supplying some excellent Album and Rubrum lillies.

Without exception the best sweet peas supplied to the Toronto florists are those grown by Miss F. F. Young, of Bradford, Ont., who, although an amateur, has the cultivation of sweet peas down to a science.

Campbell Bros., of Simcoe, are supplying a choice lot of gladioli to the Toronto florists. This firm has 15 acres from which to cut, and judging from those coming in will have some fine ones as the season advances.

A rather unusual sight was seen recently when Mr. Thos. Manton, swinging gaily in his hammock among a carload of palms, dracenas, orchids, crotons, auracarias, orange trees, etc., left Toronto for Winnipeg, to decorate the new store of The T. Eaton Co. Mr. A. Jennings, manager of the floral department in the Toronto store, in speaking of the trip to The Horticulturist, said it was a record trip in many ways. The car left Toronto July 5, arriving in Winnipeg July 8. Mr. Manton accompanies the car. On arriving at Winnipeg some of the boys evidently thought the fruit on the orange trees was brought for their special benefit, as they helped themselves during Mr. Manton's absence. Such a display was never before witnessed in Winnipeg, and the palms, some of which were 20 feet in height, caused a sensation.

HAMILTON'S FRUIT AND FLOWER SHOW

The Hamilton Fruit and Flower Show, advertised in this issue, will be held in the Thistle Rinks, Hamilton, September 12, 13 and 14. The prize list is one which should assure the exhibit of the best fruit and flower products from the finest fruit and flower sections of Canada. The Hamilton Horticultural society is straining every effort to make the exhibition a success. They are in no way competing with the Fruit, Flower and Honey Show at Toronto, but believe that their dates are so arranged that they will be able to have many of the early fruits on exhibition which will not be in condition in November.

The fruit list is a very extensive one, embracing 50 sections of apples, and offering large prizes for export fruit in boxes 10 x 11 x 20 inches, confined to the following varieties: Alexander, Blenheim. McIntosh, King, Wealthy, Baldwin, Spy, Ontario, Gravenstein, Louise.

In grapes there are 37 sections, including the most profitable varieties.

In peaches prizes are offered for 22 sections, giving special prizes to seedlings worthy of introduction, thus encouraging the art of the hybridist. The majority of peaches will be at their best during this exhibition.

Fifty-three prizes are offered for pears, including premiums for the best commercial and dessert varieties.

The plums are a fruit which will be in splendid condition for this exhibition, and the directors have realized this fact by offering prizes for 25 different varieties and special prizes for collections of Japanese and English plums, also for general collections of merit. The quince, a fruit which is not used as extensively as it should be, has not been overlooked.

PRIZES FOR FLOWERS.

It would be a mistake to conclude that while the society has done everything to encourage the production of fruit that it has in any way neglected flowers. Good prizes are offered covering 100 sections, embracing foliage, flowering and specimen plants, hardy herbaceous perennials, annuals, and almost all cut flowers which will be in bloom about September 12.

The professional florists have been liberally dealt with. While their prize list is not as large yet good prizes have been offered, and the Hamilton Horticultural society well knows from past experience that they have not only have the support of local florists but from all professionals who can possibly attend.

Mr. J. M. Dickson, of 22 Bruce street, Hamilton, Canada, would be pleased to receive applications for prize lists and entry forms from all interested. No entry fee will be charged. Entries close September 4.

OUR SPECIAL FRUIT CROP REPORTS

Judging from reports received from correspondents in the different parts of Ontario up to July 26, the fruit crop will be almost an average one. Apples and pears had promising bloom, but wet weather and lack of sunlight at the proper time prevented the fruit from setting. In many sections the fruit set, but fell off later on.

Cherries were a full crop in many districts, but some growers lost a great portion of the crop by rot which came with destructive force in a day or two just when the fruit was ready to be harvested. Sweet cherries suffered more in this respect than did the sour varieties. Strawberries varied from a half to full crop, but the sample was good. Other small fruits promise greater yield than last year.

An abundant crop of plums set, but many fell off during the wet weather, and some sections report rot setting in. Despite these facts, however, the crop will be much ahead of last year.

Peaches and grapes have excellent promise. Some correspondents state that the yield will be three times last year's, but on the whole 25 per cent. increase seems to be the average estimate. The decrease owing to the destruction of trees during the severe winter of 1903-4 will scarcely be made up by the higher yield where trees escaped the frost. Grapes are ahead of last season's supply, but already the destructive rot is showing, and unless weather unfavorable to its development sets in a considerable percentage of the crop will be destroyed in a number of sections.

PROSPECTS IN LAKE ERIE SECTION.

The outlook for apples in the counties along Lake Erie is not very bright. Most reports state that the crop will be light and only 40 to 50 per cent. of last year's yield. Pears are also very light, and in many cases reported as a failure. Reports give plums medium to heavy crop or about double that of last season. Cherries did not yield as well as was anticipated, but peaches and grapes are much ahead of last year. Strawberries have been scarce, but other small fruits have excellent promise.

NIAGARA PENINSULA OUTLOOK.

Apples in the Niagara district have a poor promise. One grower places the yield at 10 per cent. that of last year. The prospects, however, are for 30 to 50 per cent. The deficiency in apples is made up by a fine promise of other fruits, even pears in some cases being a fair crop. Cherries were abundant, but rot destroyed some orchards. Plums promise 40 to 75 per cent. increase over last year's yield. A report from Ridgeway says the plums are falling off, while one from Glanford states that rot is developing.

HEAVY CROP OF PEACHES.

Were it not for the fact that so many peach trees were destroyed by frost, this season would give a bumper crop. Almost every orchard in the Grimsby and St. Catharines districts promises an increase of 20 to 40 per cent. over last year's yield. Several growers are shaking or picking off the fruit so that they may have better quality. The grape crop promises to be about the same or slightly better than 1904.

IN BURLINGTON DISTRICT.

Apple growers in the Burlington district promise only a medium crop, some reports placing it at one-third that of last year. Pears are a light crop. Plums, peaches and grapes are very much above the yields of last season. Small fruits are a medium to full crop.

COUNTIES ALONG LAKE ONTARIO.

Early apples are a medium crop in the counties bordering on Lake Ontario, but the fall and winter varieties are not up to last year except in a few cases. The fruit, though lacking in quantity promises to be above the average in quality. Pears are scarce and scab has been reported bad in Ontario county. The outlook for plums is for a full crop, double that of 1904.

POOR PROMISE ALONG LAKE HURON.

As anticipated in last month's report, the apple crop in the Lake Huron district will be light. The best the growers can promise is 30 to 50 per cent. of last year's yield. Pears promise a light crop to a failure, although one report quotes 25 per cent. ahead of 1904.

GEORGIAN BAY COUNTIES.

Reports from growers in the Georgian Bay district place the apple crop equal to last year's. Ben Davis trees are well loaded. Prospects early in the season were bright for the Pewaukee but the fruit is falling off. Plums promise a heavy yield, while small fruits are better than last year.

Florists

WRITE us for quotations on young stock of Primulas (Chinese and Obconica), Cinerarias, Cyclamen, etc.

Also Palms and Araucarias of very select quality.

You will find our prices right.

THE WEBSTER FLORAL COMPANY, LIMITED

Wholesale and Retail Florists

HAMILTON, ONTARIO

PROSPECTS IN INLAND COUNTIES.

From inland counties come the best reports for apples. Dufferin, Peterborough and the south part of Simcoe promise as good or better yield than last year. Pear trees are very scarce and the yield poor. Plums are reported as being a medium to full crop. Small fruits, too, are plentiful.

OTHER SECTIONS.

Apples promise to be a heavier crop in the Ottawa valley than they were a year ago. McIntosh, Wealthy and Fameuse are quoted as being a good crop. A noticeable feature is the absence of fungous diseases. In Muskoka apples are reported up to last season's crop and coming in earlier. In Algoma district the promise is slightly better than 1904. Pears and plums have not recovered from the winter of 1903 and 1904. All small fruits are a heavy crop.

Fruit Crop Notes

Writing from Essex county, J. O. Duke, of Olinda, says that present appearances point to the apples of that section being quite wormy.

Jas. Symington, of Port Dover, reports that strawberries were light, but other fruits will be a good crop.

A report from Robt. Thompson, of St. Catharines, says that the hot weather is having a good effect in preventing rot on the grapes. From Hamilton R. H. Lewis reports that black rot has already started.

On July 19 John Rice, of Whitby, writes that appearances earlier in the season favored a large crop, but continued wet weather caused much of the fruit to drop.

From Bond Head, H. B. Jeffs reports that plums have been infested with a host of "little black bugs" and that black knot is very prevalent.

D. M. Lee reports from Paris that raspberries are a short crop and that plums have nearly all rotted.

In the Okanagan Valley, British Columbia, the fruit is expected to ripen a week or 10 days earlier than usual owing to warm dry weather.

J. E. McNeill, of Wanstead, Lambton county, has a fine quince tree which has borne a good crop each season for five years.

The Davis Clothes Line Reel

We make this reel. It is for the yard. It has 130 feet of clothesline, twisted wire, and occupies only a 16 foot circle. You tilt it to one side to pin the clothes on, then straighten it up with a push. It then holds the washing high off the ground. The wheel turns round with the wind, and dries the clothes evenly and quickly. No more yard tangled up with clothes line to run against—no more washing falling into the mud. It is cheap too, and durable. Sent all ready to set up, needing only a post hole. Circular free. See our address on last cover page of this issue.

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The Season for **ROSES** may be past and gone, but the season for

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ORNAMENTALS, VINES, SHRUBS AND TREES

is never past.

IT PAYS TO BUY THE BEST

Write for our illustrated catalogue.

The Helderleigh Nurseries

SALESMEN WANTED.

E. D. SMITH, Winona, Ont.

FRUIT, FLOWER AND VEGETABLE PRIZE LIST

The prize lists for the floral and vegetable sections of the Provincial, Fruit, Flower, Vegetable and Honey Show, or The Ontario Horticultural Exhibition, as it is proposed to call it, have been completed and a portion of the fruit prize list. The prizes in the floral section will be worth about $1,000, in the fruit division $800, and for vegetables $200. Here are the prize lists as completed to date :

FLORAL EXHIBITS.

The rules governing the floral exhibits will be published in the prize list. They require that all exhibits, except made-up work, must be grown by the exhibitor and in his possession three months before the date of the show.

CLASS A—CHRYSANTHEMUMS, PLANTS AND MISCELLANEOUS.

Best I specimen, any variety or sized pot, 1st $6, 2nd $5, 3rd $4.

Best 1 standard, any variety or sized stem, not more than 3 feet, 1st $6, 2nd $5, 3rd $4.

Best 3 specimens, white, pots not to exceed 10 inches, 1st $12, 2nd $10, 3rd $8.

Best 3 specimens, pink, pots not to exceed 10 inches, 1st $12, 2nd $10, 3rd $8.

Best 3 specimens, yellow, pots not to exceed 10 inches, 1st $12, 2nd $10, 3rd $8.

Best 12 single stems, and flowered, not less than 4 varieties, in 6-inch pots, 1st $6, 2nd $5, 3rd $4.

Best 5 single stems and flowered, not less than 8 varieties, in 6-inch pots, 1st $12, 2nd $10, 3rd $8.

Best 12 specimens palms, not less than four varieties, pot not to exceed 10 inches, 1st, $10, 2nd $8, 3rd $6.

Best 50 ferns, not less than 8 varieties, pots not to exceed 3 inches, 1st $5, 2nd $4, 3rd $3.

Best 25 ferns, not less than 6 varieties, pots not to exceed 3 inches, 1st $4, 2nd $3, 3rd $2.

Best 6 specimens ferns, 1st $10, 2nd $8, 3rd $6.

Best 1 orchid in flower, 1st $3, 2nd $2, 3rd $1.

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10c
Address Secretary Horticultural Society,
195 Pretoria Ave., Ottawa, Ont.

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Pleasure Grounds made by . . . . . .
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GRIMSBY
Drawings made to a scale, so that any gardener may carry them out. Correspondence solicited.

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National Exhibition
TORONTO, ONT.
August 26th to September 11th, 1905
Upwards of $4,000.00 in prizes for
Horticulture and Floriculture
Entries close Monday, August 14th.
Special arrangements on all lines of travel and transportation.
For entry blanks, prize lists and all information address
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Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion ; minimum charge, fifty cents in advance.

WANTED — SUBSCRIPTION CANVASSERS for The Canadian Horticulturist both in cities and in the fruit districts of Canada. Liberal commissions offered. Good men soon put on salary. Write The Canadian Horticulturist, Rooms 507-508, Manning Chambers. Toronto, Ont.

GREENHOUSE AND STOCK FOR SALE—TEN thousand feet of glass ; one of the best equipped greenhouses in Toronto, located in the best residential sections of Parkdale. large plant trade; residence, stable and everything in good condition. Apply to F. C., care of The Canadian Horticulturist.

FOR SALE—FLORIST BUSINESS, WELL established in good residential part of Toronto ; new brick store and dwelling ; also greenhouses. These may be purchased separately or combined ; owner has excellent reasons for retiring. A bargain if sold immediately. Apply to M. L., care of The Canadian Horticulturist, Toronto.

APPLE GRADER. A FIRST-CLASS PETTIT Fruit Grader, in perfect working order, for sale at a bargain. Address L. Woolverton, Grimsby, Ont.

CACTI FOR SALE. A COLLECTION OF RARE and Varied Cacti. Apply Rev. C. E. Whitcombe, Hamilton.

CACTI—FOR SALE, A VARIED AND RARE collection of Cacti, made by the late William Raynor, of Hamilton. Apply to Mrs. Wm. Raynor, 61 Steven street, Hamilton.

Best 6 cyclamen, in bloom, pots not to exceed 8 inches, 1st $5, 2nd $4, 3rd $3.

Best 12 primulas, in bloom, pots not to exceed 8 inches, 1st $5, 2nd $4, 3rd $3.

Best 6 pots of callas, in bloom, pots not to exceed 8 inches, 1st $5, 2nd $4, 3rd $3.

Best 6 begonias, in bloom, pots not to exceed 8 inches, 1st $5, 2nd $4, 3rd $3.

Best group of plants, arranged for effect, consisting of mums, palms, ferns and selaginellas, space not more than 90 square feet, Hallam cup, 1st $30, 2nd $25, 3rd $20, 4th $15.

Best group of foliage plants, arranged for effect, in which mums may be introduced, space not to exceed 90 square feet, 1st $20, 2nd $15, 3rd $12, 4th $10.

Best display of orchids, in which nepenthes and any foliage may be used, arranged for effect, 1st $25, 2nd $20, 3rd $15, 4th $10.

CLASS C—CUT BLOOM (CHRYSANTHEMUMS.

Best 25 distinct varieties, cup, 1st $8, 2nd $6, 3rd $4.

Best 12 distinct varieties, Hallam cup, 1st $6, 2nd $4, 3rd $3, 4th $2.

Best 25 T. Eaton, cup.

Best 25 Dr. Oronhyatekha, cup.

Best 25 any varieties, 1st $10, 2nd $8, 3rd $6, 4th $4.

Best 12 one variety, 1st $6, 2nd $4, 3rd $3, 4th $2.

Best 6 distinct varieties never before exhibited in Ontario, 1st $5, 2nd $4, 3rd $3, 4th $2.

Best 6 white, 1st $4, 2nd $3, 3rd $2, 4th $1.

Best 6 pink, 1st $4, 2nd $3, 3rd $2, 4th $1.

Best 6 yellow, 1st $4, 2nd $3, 3rd $2, 4th $1.

Best 6 crimson, 1st $4, 2nd $3, 3rd $2, 4th $1.

For largest bloom in the show, prize R. J. Score' guinea pants.

CLASS D—CUT BLOOM, CARNATIONS.

Best 25 white, named, 1st $4, 2nd $3, 3rd $2.

Best 25 red, named, 1st $4, 2nd $3, 3rd $2.

Best 25 light pinks, named, not darker than Scott, 1st $4, 2nd $3, 3rd $2.

Best 25 dark pinks, not lighter than Scott, 1st $4, 2nd $3, 3rd $2.

Best 25 crimson, 1st $4, 2nd $3, 3rd $2.

Best 25 fancy, 1st $4, 2nd $3, 3rd $2.

Best 25 new, introductions of 1905, 1st $5, 2nd $4, 3rd $3, 4th $2.

Best 25 new, not yet introduced to commerce, cup.

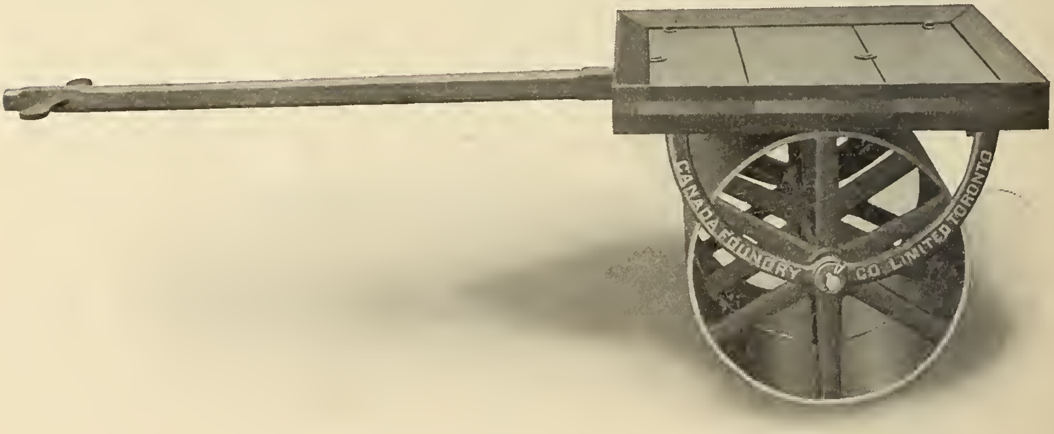
Best 50 blooms, one variety, arranged loosely in vase, 1st $8, 2nd $6, 3rd $4, 4th $3.

Best 50 blooms, any varieties, with any foliage, arranged loosely in vase, arrangement to count in judging, not necessarily grown by exhibitor, 1st $8, 2nd $6, 3rd $4, 4th $3.

CLASS E—DECORATIONS.

Best decorated dinner table, to seat eight, laid complete, exhibitor to supply everything, 1st $60, 2nd $50, 3rd $40.

LAWN ROLLERS



Well made, light and serviceable. Can be weighted when desired.

CANADA FOUNDRY COMPANY, LIMITED

HEAD OFFICE: TORONTO

District Offices: Montreal, Halifax, Ottawa, Winnipeg, Calgary, Vancouver, Rossland

Money Given Free to People who buy Goods from Advertisers in this Issue.
See Notice in Advertising Columns.

CLASS F—CUT BLOOM, ROSES.

Best 10 yellow, 1st $4, 2nd $3, 3rd $2, 4th $1.

Best 10 white, 1st $4, 2nd $3, 3rd $2, 4th $1.

Best 10 pink, 1st $4, 2nd $3, 3rd $2, 4th $1.

Best 10 crimson, 1st $4, 2nd $3, 3rd $2, 4th $1.

Best 10 light pink, 1st $4, 2nd $3, 3rd $2, 4th $1.

Best 10, any other color, 1st $4, 2nd $3, 3rd $2, 4th $1.

Best 10 American Beauties, 1st $8, 2nd $6, 3rd $4, 4th $2.

Best 25 American Beauties, 1st $15, 2nd $12, 3rd $10.

Best 10 new, introduction of 1905, 1st $6, 2nd $4, 3rd $3, 4th $2.

Best vase of 50 roses, arrangement to count in judging, not necessarily grown by exhibitor, American Beauty excluded, 1st cup, 2nd $12, 3rd $10, 4th $8.

CLASS G—CUT BLOOM, VIOLETS.

Best bunch 50 violets, double, 1st $3, 2nd $2, 3rd $1.

Best bunch 50 violets, single, 1st $3, 2nd $2, 3rd $1.

CLASS H—FLORAL DESIGNS.

Best funeral design, standing crescent, wreath (20-inch frame), 1st $15, 2nd $12, 3rd $10, 4th $8.

Best presentation basket of mums, 1st $10, 2nd $8, 3rd $6, 4th $4.

Best presentation basket, any flowers, 1st $10, 2nd $8, 3rd $6, 4th $4.

Best flat basket of mums, for table decorations, not to exceed 30 inches over all, 1st $10. 2nd $8, 3rd $6, 4th $4.

Best hand bouquet, any flowers, 1st $10, 2nd $8, 3rd $6, 4th $4.

VEGETABLE PRIZE LIST.

Artichoke, red, 12, 1st $2, 2nd $1, 3rd 50c.

Artichoke, white, 12, 1st $2, 2nd $1, 3rd 50c.

Beet, long, 6 roots, 1st $2, 2nd $1, 3rd 50c.

Beet, turnip, 6 roots, 1st $2, 2nd $1, 3rd 50c.

Beans, green, best quart, 1st $2, 2nd $1, 3rd 50c.

Brussels Sprouts, 3 stalks, 1st $3, 2nd $2, 3rd $1.

Cabbage, red, 3 heads, 1st $2. 2nd $1.50, 3rd $1.

Cabbage, Savoy, 3 heads, 1st $2, 2nd $1.50, 3rd $1.

Cabbage, pointed, 3 heads, 1st $2, 2nd $1.50, 3rd $1.

Cabbage, flats, 3 heads, 1st $2, 2nd $1.50, 3rd $1.

Cauliflower, best, 3 heads, 1st $3, 2nd $2, 3rd $1.

Cardoon Spanish, red, white, yellow, 1 each 1st $2, 2nd $1.50, 3rd $1.

Celery, Paris Golden, 6 heads, 1st $3, 2nd $2, 3rd $1.

Celery, red, 6 heads, 1st $3, 2nd $2, 3rd $1.

Celery, winter, 6 heads, 1st $3, 2nd $2, 3rd $1.

Carrots, table, best 12 roots, 1st $2, 2nd $1.50, 3rd $1.

Cucumber, White Spine, 2, 1st $2, 2nd $1.50, 3rd $1.

Cucumber, greenhouse, 2, 1st $2, 2nd $1.50, 3rd $1.

Citron, preserving, 2, 1st $2, 2nd $1.50, 3rd $1.

Egg Plants, 3, 1st $2, 2nd $1.50, 3rd $1.

Endive, 6 heads, 1st $2, 2nd $1.50, 3rd $1.

Kohl Rabbi, green, 3 roots, 1st $2, 2nd $1.50, 3rd $1.

Kohl Rabbi, purple, 3 roots, 1st $2, 2nd $1.50, 3rd $1.

Leek, 6, 1st $2, 2nd $1.50, 3rd $1.

Lettuce, Grand Rapids, 3 heads, 1st $2, 2nd $1.50, 3rd $1.

Lettuce, head, 3 heads, 1st $2, 2nd $1.50, 3rd $1.

Onion, White Globe, 12. 1st $2, 2nd $1.50, 3rd $1.

Onion, Yellow G. Danvers, 12, 1st $2, 2nd $1.50, 3rd $1.

Onion, Red Globe, 12, 1st $2, 2nd $1.50, 3rd $1.

Onion, Prizetaker, 12, 1st $2, 2nd $1.50, 3rd $1.

Onion, White Pickling, quart, 1st $2, 2nd $1.50, 3rd $1.

Onion, Yellow Pickling, quart, 1st $2, 2nd $1.50, 3rd $1.

Keep the weeds down by using the

"Handy Hand Scuffler"

the best tool in the market for farmers or gardeners. See Candian Horticultuuist of April for particulars. **Wm. Welsh, Kinkardine.**

GEO. VIPOND & CO.

Fruit Commission Merchants

MONTREAL

Reliable—Prompt—Safe

Caught in a Glut

is what happens to the fruit grower who depends on one market to take his crop.

Fortunately their is no need to be thus caught. Canada is wide. There are many centres from Halifax to Calgary anxious to get good fruit from a reliable grower.

THE CANADIAN GROCER is the medium through which the grower can reach these buyers.

An advertisement in our Fruit Department costs little and goes far.

Drop a card for rates.

The Canadian Grocer

TORONTO, ONT.

Parsnip, 6 roots, 1st $2, 2nd $1.50, 3rd $1.
Parsley, 6 stalks, 1st $2, 2nd $1, 3rd 50c.
Radish, winter, 6 roots, 1st $2, 2nd $1, 3rd 50c.
Radish, forcing, 6 roots, 1st $2, 2nd $1, 3rd 50c.
Salsify, 12 roots, 1st $2, 2nd $1.50, 3rd $1.
Spinach, 1 basket, 1st $2, 2nd $1.50, 3rd $1.
Squash, yellow and green, 1 each, 1st $3, 2nd $2, 3rd $1.
Vegetable Marrow, 2, 1st $3, 2nd $2, 3rd $1.
Tomato, red, 12, 1st $2, 2nd $1.50, 3rd $1.
Tomato, pink, 12, 1st $2, 2nd $1.50, 3rd $1.
Potato, red, 12, 1st $2, 2nd $1.50, 3rd $1.
Potato, white, 12, 1st $2, 2nd $1.50, 3rd $1.
Turnip, table, white, 12, 1st $2, 2nd $1.50, 3rd $1.
Turnip, table, Swede, 12, 1st $2, 2nd $1.50, 3rd $1.
Herbs, collection not to exceed 12 varieties, 1st $3, 2nd $2, 3rd $1.

PRESERVED FRUIT.

CLASS 10.

Three prizes of $3, $2 and $1 each will be offered for the best one-quart sealers of canned fruit of each of the following varieties of fruit: Cherries (black), cherries (red), cherries (white), grapes, peaches (white fleshed), peaches (yellow fleshed), pears, plums (red), plums (yellow), raspberries (best, red, black), strawberries.

CLASS 11.

Jams.

In this class the prizes will be $2.50, $2 and $1.50: Black currant, peach, pear, plum, raspberry, strawberry.

CLASS 12.

Jellies.

Three prizes of $2.50, $1.50 and $1 will be offered in each section for the best exhibits of two half pint jars of the following varieties of fruit: Apple, crab apple, currant (red), quince.

In classes 10, 11 and 12 no gelatine or preservatives other than sugar shall be used.

Regular Sailings

The improvement in the regularity of steamship sailings from Montreal means much to fruit exporters. There was a time when specific sailings from Montreal could not be depended on, but in recent years faster and better vessels have been brought to the port, so that now it is a rare thing for a ship to miss her sailing date. Some apple exporters are apt to overlook this very important feature of the St. Lawrence route, but a glance over the history of the past two or three years will convince shippers that the regularity of the Montreal sailings is worthy of their attention. The Robert Reford Company very early saw the necessity of regular sailings and worked hard to have such a service. The result now is a regular weekly service to Glasgow and London by ships fitted up with cold storage refrigerators and cool air chambers. See advertisement below.

ATLANTIC REFRIGERATOR SERVICE

THOMSON LINE

Montreal and London Service

Cervona, cold storage and cool air, Aug. 5th
Iona, - cold storage and cool air, " 12th
Devona, cold storage and cool air, " 19th
Kildona, cold storage and cool air, " 26th
Hurona, cold storage and cool air, Sep. 2nd

Direct service to Newcastle, Leith and Aberdeen. Sailing cards will be furnished on application.

DONALDSON LINE

Montreal and Glasgow Service

Tritonia, fan ventilation......... Aug. 3rd
Marina, cold storage and fan ven., " 10th
Athenia, cold storage and fan ven., " 17th
Lakonia, cold storage and fan ven., " 24th
Salacia, fan ventilation ... . " 31st

LORD LINE TO CARDIFF, fortnightly sailings.

FOR SPACE APPLY TO

THE ROBERT REFORD CO., LIMITED

STEAMSHIP AGENTS

Montreal, Toronto, Portland, Me., St. John, N. B.

TORONTO OFFICE: Room 110, Union Station D. O. WOOD, Western Agent

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See Notice in Advertising Columns.

An Interesting Book

Much valuable information for fruit growers and florists is contained in a book, recently published, entitled The Orchard and Fruit Garden, by E. P. Powell, the well known United States authority. The book, which contains over 325 pages and numerous illustrations, is divided in three parts. Part first is devoted to the orchard and deals with the varieties and the handling and marketing of apples, pears, plums, cherries, peaches and numerous other varieties of fruit. Part second is entitled The Fruit Garden, and treats on currants, strawberries, raspberries, etc., a full chapter being devoted to each.

Part third deals with cultural directions. A few chapters are devoted to windbreaks, drainage, irrigation, pruning, spraying, harvesting, marketing, etc. The William Briggs Company, of Toronto, are Canadian agents for this publication.

The Classik Kids

The Classik Kids are a chirpy little pair who have succeeded in placing Sure Grip Shingles, Steel Siding and Classik Ceilings, made by the Galt Art Metal Co., Limited, in the very front row of popularity in this Dominion. Little more than six months have elapsed since these goods were first introduced, but the demand for them has been enormous. The goods themselves are largely responsible for this. Made only of the highest grade materials, by competent workmen, on modern scientific principles, they have found ready buyers wherever they have been exhibited.

This success is built on a sound basis and is sure to be more than doubled in the remaining half year. In the firt place, Galt Steel Sidings and Sure Grip Shingles, applied to any building, make it practically fire proof from without. If it is a farmer's barn, there is no danger from a flying spark from a passing locomotive or a thresher's engine, and lightning has absolutely no effect on a building thus clad in a coat of Galt steel, the latter acting as a perfect conductor. Then they make a barn, or any other building, perfectly wind, rain and storm proof. For interior decoration nothing surpasses Classik Ceilings and Panels in beauty or durability.

New Advertisers in This Issue

Miss Lilly, Toronto, Ont.
Georgian Bay Shook Mills, Midland, Ont.
C. E. Whitcombe, Hamilton, Ont.
Allan Line Steamship Co., Montreal, Que.
W. Briggs, Toronto, Ont.
Clarke & Sinclair, Dundee, Scotland.
J. F. Watson, Ottawa, Ont.
Canada Cold Storage Co., Montreal, Que.
Union Cold Storage Co., Montreal, Que.
Furness, Withey & Co., Montreal, Que.
Art Metal Co., Galt, Ont.

Why? ——— Why?

The question is, Why should the farmers of Ontario send their boys and girls to the

Ontario Agricultural College?

and the answer is, Because the boys will receive a practical and helpful working knowledge of Scientific Agriculture, and because the girls will be given a first-class training in Household Science at the **MACDONALD INSTITUTE.**

Residence Accommodation is provided for both men and women.

Macdonald Hall, the girls' residence, is one of the best equipped buildings of its kind in Canada, and the boys' dormitories are comfortable and commodious.

COURSES

Courses for Boys, varying from two years to four years in length, commence on September 13th.

Courses for Girls, varying from three months to two years in length, commence on September 13th.

For full information regarding courses, terms, etc., write to **G. C. CREELMAN**, President Ontario Agricultural College, Guelph, Ont.

Unsurpassed Facilities

Continuing their policy of improvement in facilities and service from year to year, the Allan Line, Royal Mail steamship service, has this season been equipped with fast steamers and superior facilities for handling apples, fruits, dairy products and other perishables with the utmost despatch. The refrigerators and system of ventilated compartments are thoroughly up to date, assuring discharge of this traffic at destination in perfect marketable condition. The Liverpool service has been augmented by the addition of the new turbine steamers, Victorian and Virginian, which together with Tunisian and Bavarian, constitute the fastest and most up-to-date Canadian line on the Atlantic to-day.

In order to facilitate the handling of apples and other perishables at London the Allan Line steamers now discharge their cargo at the Surrey Commercial Dock Co.'s Greenland Dock, on which has been erected the Canadian Produce warehouses, fitted with refrigerator and cool air chambers, the steamer's perishable cargo being discharged into such chambers by the most improved methods of handling.

Not content with improving the Liverpool and London services only, the Glasgow steamers are also equipped with the most modern systems of refrigeration and sirocco fan ventilation, for the handling of apples and other green fruits, and dairy products, thus making the vessels on this service unsurpassed in both speed and equipment.

With their usual enterprise the Allan Line has, therefore, the fastest and most efficient steamship service to London, Liverpool and Glasgow, the various vessels sailing weekly from Montreal during the season of St. Lawrence navigation.

As a further indication of the progressive policy of the Allan Line, there has been inaugurated this season a fortnightly service from Montreal to Havre, France, thus placing the Canadian exporters in closer touch with their French customers and enabling them to make prompt and regular deliveries of their product destined for European consumption.

Improves The Sight.—A handy aluminum pocket microscope is being introduced to fruit growers and florists by the firm of Stone & Wellington, of Toronto. These microscopes are made of aluminum and magnify four and a half times. A large number of them have been sold to farmers who find them useful in examining seeds and grains. Florists and growers use them in examining plants and trees for insects, and teachers and scholars use them in studying botany. The ordinary individual will find them useful in many different ways.

Use Corrugated Paper, it's tidy and quick.

The Biggs Fruit Box Press

(Pat. applied for)

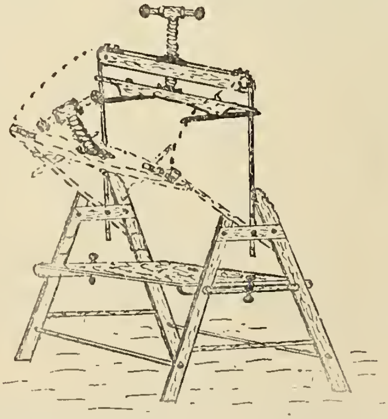
We have all kinds of Packer's Supplies.

Last month we directed your attention to our **Utility Fruit Box** with six reasons why it is the best. This month we direct your attention to our **Box Press,** which is **Light, Strong** and **Serviceable.**

We have put this Press on the market to supply the wants of Box Packers.

A Good Press will save time.

WRITE FOR PRICES



This is the only Box Press that is adjustable to press Apple and Pear Boxes of any ordinary size.

It is Complete.

NOTE—Don't forget that success in the fruit trade depends upon a **Series of Goods: Good Fruit, Good Boxes, Good Packing,** and **Good Tools** will assist you in this. Why not have these **Tools?**

The Biggs Fruit and Produce Co., Limited, - Burlington

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The Best Cameras

Quality
Style
Value

Price, from $1 up

Pocket,
Folding or
Fixed Focus

A complete line of supplies always in stock.

Mail orders promptly and carefully shipped.

Canadian Camera Company
Limited
40, 42 and 44 King Street East TORONTO

Galt Classik Ceilings

Send the Classik Kids a rough plan and measurements of office, public building or dwelling and they will furnish you free estimate of cost of Classik Ceilings, Panels and Cornices for same, together with working details.

These metal decorations give a charming and harmonizing effect to any room or building to which they are applied.

Fire proof, sanitary, best acoustic properties and practically indestructible.

GALT ART METAL CO., Ltd.
GALT, ONT.

The "Safety" Fruit Picker

does away with ladders and climbing, and ensures safety to the operator and avoids bruising of the fruit.

The "Safety" Fruit Picker will save money in clearing up your trees, and is the "proper thing" for picking "Exhibition" fruit.

DESCRIPTION

The "Safety" Fruit Picker consists of a rubber covered wire hood, attached to a 12 foot pole, which grasps the fruit the same as the human hand, tilts it up and a single twist releases the fruit and drops it down the chute into a canvas bag at the waist of the operator without bruising or coming in contact with other fruit. It can be operated by a woman or child as easily as by a man.

The pole is bamboo, which insures lightness and stability, and is divided into 8 and 4 foot lengths which are adjustable and can be used for large or small trees, at the pleasure of the operator. The wire spring, which holds the mouth of the chute in position, allows for the interference of the branches. The whole outfit weighs only 2¼ lbs.

The bag is made of canvas duck, and is attached to a steel wire frame, which conforms to contour of the body, and is strong and durable and holds half bushel of fruit; is held in position by a wide canvas strip, which goes over the shoulder with an adjustable snap to secure it, and which is easily detached to facilitate the emptying of the bag when full.

Price, complete, $2.00

The Safety Fruit Picker Co. of Ontario,
Limited.
Ridgeville, Ont.

Members of The Canadian Horticultural Association Out For a Good Time.

One of the most important organizations in Canada for the advancement of the horticultural interests of the Dominion is the Canadian Horticultural Association, whose members represent the professional florists and gardeners. The annual convention of the association was held in Montreal during August and lasted four days. The illustration shows a group of the delegates gathered on the postoffice steps preparatory to a trip around the city as the guests of the city. The newly elected president, Mr. Wm. Fendley, of Brampton, sits in the front holding his hat in his hand. At his right sits the past president, Mr. G. H. Robinson, of Montreal.

The Canadian Horticulturist

SEPTEMBER, 1905

VOLUME XXVIII NUMBER 9

HOW TO FORECAST FROSTS

J. B. REYNOLDS, O. A. C., GUELPH, ONT.

IN districts where the cultivation of fruit, flowers, or vegetables, is highly specialized, it becomes important to possess means of forecasting frost at critical times during the growing season and of preventing injury from low temperatures. This article is written with the object of giving some practical suggestions on these matters.

TOPOGRAPHIC.

Land, bordering on the water front is less liable to extremes and to low dips of temperature during the growing season than inland districts. This is one of the reasons that the best fruit sections are found by the water. Apart from the steadying influence of the water in lessening the chance of damage, frost is essentially a question in air drainage.

In a given district, the spot where night frosts are most likely to occur is the one with the lowest elevation. There is a case in point along Lake Ontario east of Stony Creek. From the lake back to the mountain there is a belt of land with a topography similar to the illustration, Fig. 1. On the side of the mountain there is a terrace, at A, where plums and pears are successfully grown. From the foot of the mountain the ground slopes gradually as at B. There grapes and peaches are grown. At C is a depression, from which the ground rises both toward the lake and toward the mountain. Experience has shown that fruit growing is much more precarious at C than at A or B. The reason is found in the topography in spite of the greater nearness of C to the water. At night, the cold, heavy air drains away from the mountain side toward C. If there were no rise of ground as at D, the air would drain to the lake, and C would be as immune from frost as A or B. But on account of the peculiar slope of the ground the cold air from the mountain side lodges at C, and here the lowest night temperatures are likely to be found.

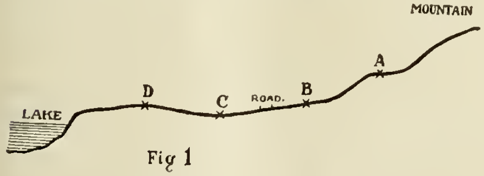

Fig 1

ATMOSPHERIC.

It is frequently possible to forecast frost from the appearance and condition of the atmosphere toward the afternoon. After a north wind has been blowing, with a clear or clearing sky, there is likely to be a considerable fall of temperature. Specifically, a clear sky, and a still, dry air, are favorable to frost. Conversely, if the sky is cloudy, or the wind high, there is less chance of a fall of temperature.

Given a still air and a clear sky, the humidity of the air, the amount of moisture in it, is the chief factor in controlling the night temperature. The temperature will fall rapidly until dew begins to gather, at which point a further drop in temperature is prevented or retarded by the condensation of moisture. The dew point, therefore, that is, the temperature at which dew begins to gather, is a good indication of the probability of frost. If the dew-point is 40 degrees F. or above at sunset, there is not likely to be frost that night. If, however, the dew-point is below 40 degrees, precautions should be taken to prevent the injury of tender flowers, vegetables, or fruit buds.

FINDING THE DEW POINT.

Following is a method for determining the dew point by means of the wet and dry bulb thermometers or sling psychrometer: Two ordinary all-glass thermometers, with cylindrical bulbs, are strapped securely to the edges of a thin board about 12 inches long and two and a half inches wide, so that the bulbs project below the board. About the bulb of one of the thermometers one fold of a fine piece of cotton or muslin is wrapped closely and tied tightly at the top. To use the psychrometer the covered bulb should be moistened with water, and by means of a cord fastened to the top of the board. The psychrometer is swung to and fro for a minute or so in the shade in the outside air, until the reading of the wet bulb is stationary. The two thermometers should be read quickly after the swinging ceases and the readings recorded. The depression of the wet bulb reading below that of the dry is the amount of cooling produced by evaporation and indicates the humidity of the air. From these readings the dew point can be determined from the table given below.

To illustrate the use of the table: Suppose that the air temperature, the dry bulb, reads 55 degrees, while the wet bulb reads 47 degrees, a depression of 8 degrees, the table gives a dew point of 39 degrees. If this condition exists at sunset, with a clear sky and little or no wind, there is likelv to be frost.

THE ELECTRIC ALARM.

Fig. 2 illustrates a simple and inexpensive arrangement for giving warning when a certain temperature, say 32 degrees, has

DEPRESSION OF THE WET BULB THERMOMETER.

Thermometer Dry-Bulb	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°
65 deg.......	..	..	..	..	..	..	..	..	..	..	..	..	40
64 deg.......	..	..	..	..	..	..	..	..	..	..	..	41	39
63 deg.......	..	..	..	..	..	..	..	..	..	..	42	40	38
62 deg.......	..	..	..	..	..	..	..	..	..	..	41	39	37
61 deg.......	..	..	..	..	..	..	..	..	..	42	40	38	35
60 deg.......	..	..	..	..	..	..	..	..	..	41	39	36	33
59 deg.......	..	..	..	..	..	..	..	..	42	40	38	35	32
58 deg.......	..	..	..	..	..	..	..	..	41	39	36	33	30
57 deg.......	..	..	..	..	..	..	..	41	40	37	35	31	28
56 deg.......	..	..	..	..	..	..	..	40	39	36	33	30	26
55 deg.......	..	..	..	..	..	..	41	39	37	34	31	28	25
54 deg.......	..	..	..	..	..	..	40	38	36	33	30	27	23
53 deg.......	..	..	..	..	..	41	39	37	34	31	28	25	20
52 deg.......	..	..	..	..	..	40	38	36	33	30	27	23	18
51 deg.......	..	..	..	..	41	39	37	34	31	28	25	21	16
50 deg.......	..	..	..	..	40	39	37	33	30	27	23	19	14
49 deg.......	..	..	..	41	39	37	34	31	28	25	21	17	11
48 deg.......	..	..	..	40	38	36	33	30	27	23	19	14	9
47 deg.......	..	..	41	39	37	32	29	25	22	19	17	12	6
46 deg.......	..	..	40	38	36	33	30	27	24	20	15	10	3
45 deg.......	..	41	39	37	35	32	29	26	22	18	13	7	-1
44 deg.......	..	40	38	36	33	30	27	24	20	16	11	4	-5
43 deg.......	41	39	37	35	32	29	26	23	19	14	8	1	-9
42 deg.......	40	38	36	34	31	28	25	21	17	12	6	-2	-15
41 deg.......	39	37	35	33	29	26	23	19	15	9	3	-6	-22
40 deg.......	38	36	33	29	26	23	19	15	9	3	-6	-22	..

been reached. It consists of a thermostat, an electric battery, and an electric bell. The thermostat is provided with a metallic strip clamped at one end. A change of temperature causes a bending of the strip so that it touches the point of an adjustable screw and makes electric contact. The thermostat should be placed outside, while the battery and the bell may be placed in the bedroom. As soon as the temperature outside falls to 32 degrees the thermostat makes the circuit and rings the bell. The rest depends upon the man who is rung up.

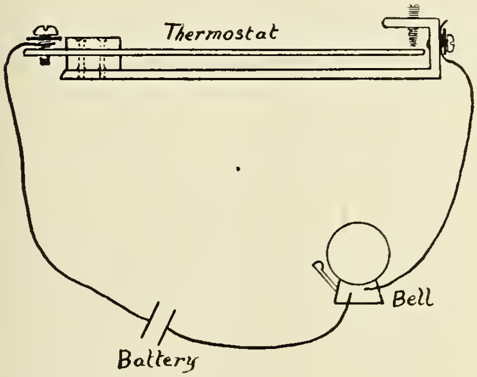

Fig. 2.

There are several practical methods of preventing frost, or if frost has occurred, of preventing fatal injury to plants. Among these methods a few of the more important may be mentioned:

I. WARMING THE AIR.

A large number of small fires, properly placed, will raise the temperature of an orchard or garden several degrees. Under this head various methods have been tested in California, and the best has been that of suspending wire baskets a few feet from the ground, each holding several pounds of charcoal or other suitable fuel. The baskets may cost 10 cents each, and if 40 baskets were used per acre, the fuel would cost $2.50 or $3.00.

2. PREVENTING RADIATION.

A cloudy sky at night is often effective as a prevention of frost. Adopting this idea, the fruit grower may create clouds of smoke in the orchard by setting fire to previously prepared smudge piles, consisting of damp straw or strawy manure. The effect of both of the above methods will depend upon the existence of air currents. For best effect the air should be still.

3. WATERING TREES AND PLANTS.

Injury from frost may often be prevented by sprinkling. This, of course, is practicable only where there are waterworks, and then only on a small scale, but may be used for gardens and flower beds. This should be done in the evening before frost is expected. If, however, no precautions have been taken and plants have been frozen, fatal injury may often be prevented by sprinkling very early in the morning before the temperature begins to rise—before sunrise. It is believed to be the rapid rise of temperature before the injured cells have time to readjust their functions, that causes injury. The blanket of water prevents the rapid heating.

It may be said in conclusion, going back to the question of forecasting, that the daily forecasts published by the weather bureau at Toronto should be followed closely. Besides being published in the daily papers, these forecasts may be secured by telephone from the nearest telegraph office. With the extension of rural telephones the important service rendered by the weather bureau may be brought within reach of every rural district in Ontario.

Power Spraying.—With the advent of the power sprayer in the course of a year or two we will have these power machines working in sections where a few thousand trees can be found within a square of six to eight miles, just as we have threshing machines working to-day.—(Frank J. Baker, Georgetown, Ont.

THE SHIPMENT OF FRUIT IN COLD STORAGE

J. F. SCRIVER, FRUIT INSPECTOR, MONTREAL, QUE.

ONE would hardly believe the amount of loss sustained by shippers through their fruit landing in poor condition. There has been a great deal of nonsense written about cold storage on vessels by people who never took the pains to enquire or examine into the subject for themselves. It was once thought, and some shippers will still argue, that the bulk of the damage to the fruit in shipping is the result of poor storage on the vessels. I contend and can prove that if fruit, apples especially, are picked and packed properly and placed on the steamer in good condition that over 90 per cent. will land in good condition.

BEGIN RIGHT.

In considering a system of cold storage for fruit we must begin at the right end where the fruit starts on its long journey to market. If apples are picked and allowed to remain in piles, exposed to the sun and rain for days before packing, or if packed immediately and then barreled and left in the orchard exposed to the weather, the most perfect system of cold storage in the world is not going to make those apples land in good condition in the Old Country.

Inspectors at Montreal take the temperature of the fruit in barrels or boxes before loading, and have often found the thermometer 10 degrees, yes, sometimes 15 degrees, higher in the package than the outside temperature. On opening some barrels we could feel the heat rising two feet above the barrels. Now, is it reasonable to suppose that, even with the best of cold storage, these apples are going to reach the British markets in good condition. It is a common fault with all of us to blame somebody else for our misfortunes, when they are really caused by our carelessness. If fruit shippers, instead of blaming the cold storage in cars or steamers for their losses, would change their method of handling fruit, pick and pack properly and load the fruit in cool condition they would find their losses greatly reduced. If we had large cold storage warehouses at central shipping points where fruit could be placed and thoroughly cooled before loading on cars the loss would be reduced to a minimum.

Here are a few rules to observe when exporting fruit, especially apples: Do not allow your fruit to become ripe before picking. Do not allow apples to remain in piles in the orchards. Do not allow apples to remain in barrels exposed to the weather Do not put windfalls in even No. 2 apples. Have the fruit cool before loading.

I do not think it is possible for any shipper to observe all these rules, the way business is conducted at present, and the only remedy I see is cooperative packing and shipping of fruit. I hope to see the bulk of the fruit handled in this way within a few years.

FRUIT GROWING IN GREAT BRITAIN

W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA, ONT.

DURING my recent visit to the old country many interesting observations regarding fruit and fruit culture were made.

Strawberries had been in season but a few days when we reached Ireland on June 24, and after being nine days on a steamer we were very ready to test this luscious fruit. The first strawberries tried appeared to confirm an impression obtained at the close of the strawberry season in a previous year, namely, that the old country strawberries, though high in flavor, were lacking in sprightliness and character. We were disabused of this impression, however, after eating the Royal Sovereign, which, undoubtedly, is one of the most delicious berries in existence. We should like to have had some Wm. Belt or Marshall for comparison.

On looking into the matter and visiting the plantations where the fruit was grown, it was found, as in Canada, that the varieties of poor or medium quality are often the most productive, and to the average grower the most profitable, hence one has to test Royal Sovereign or some other good variety to get a right idea of what can be produced. The best berries are also very large, no doubt principally due to the fact that the plants are grown on the hill system, the plants being from 22 to 24 inches apart each way. From three to five crops are usually taken from a plantation. The price of strawberries was, on the whole, lower than in Canada, varying from 2d. to 6d. per box.

Everybody eats gooseberries out of hand when the season is on, and it does not take long for a Canadian to get to like this refreshing pastime. A morning visit to the garden in gooseberry time is a very popular kind of entertainment. It is a fine sight to see these immense gooseberries grown on large areas after being accustomed to a plantation of Downing in Canada. Raspberries and currants were also abundant.

Two visits were made to the principal fruit districts of Ireland, in Armagh county. Apple orchards of 20 acres are not uncommon here, and many young trees are being set yearly. The fruit growers of this district are confident that it will not be long before Canadian or American apples will not be needed in Ireland, and certainly if the quality and appearance of the fruit were as good as our own, and the crop as certain, we should have this fear, because of the large number of trees which are being set. It is certain, however, that Canadian fruit, of the best quality only, will in the near future command a good price, as the people prefer their home-grown fruit for culinary purposes, owing to its greater acidity, and it is naturally in better condition when bought. We were told that last year when apples were so plentiful in Ireland they were shipped to Glasgow and the returns were very fair. The Bramley Seedling is the most popular variety in the north of Ireland, as it succeeds well.

A visit was also paid to Kent, one of the best fruit districts of England, where large areas are devoted to both large and small fruits. The impression obtained on seeing the apple orchards both in England and Ireland is that the trees in general are planted too close; that fine fruit is produced while the trees are young and the soil kept cultivated, or while other crops, demanding cultivation, can be grown between the trees; but that as soon as the trees become older and it becomes unprofitable to grow other crops on account of the shade from the apple trees, the fruit does not get sufficient sunshine and, we should think, would not produce good fruit. In Canada trees of the same age would be producing the most profitable crops, although, unfortunately, trees are often too close with us. The bad effects of too close planting could be avoided by timely thinning out the trees, but this, if done at all, is usually left too long.

Many trees in the old country are, however, grown on Paradise stock and become profitable early. There are many orchards which are judiciously planted or thinned where the large trees have plenty of room and clean cultivation is adopted, and where good fruit is produced.

The Schools of Horticulture at Swanley, Kent, and at Reading were visited for the purpose of seeing the character of the work done and the methods employed. Both of these colleges are in a very flourishing condition. A visit was also paid to the establishment of Messrs. Sutton & Sons, Reading, Eng., where many interesting things were seen. At the Woburn Fruit Experiment Station, Ridgmount, which was also visited, there is a series of experiments in fruit culture which is quite unique. The experiments appear to be very carefully conducted, and the results are striking.

In Ireland the Department of Agriculture is doing splendid work, and through the countesy of Sir Horace Plunkett every facility was given me to gain an insight into the methods employed by the Department and the work being done. The apple crop in Great Britain and Ireland is light this year owing principally to severe frosts during the blossoming season, hence good Canadian fruit should sell at profitable prices.

THE HANDLING OF THE APPLE CROP *

G. HAROLD POWELL, U. S. DEPT. OF AGRI., WASHINGTON.

A FARM storage or local warehouse would overcome some of the practical difficulties now experienced in handling the fruit crop. The average fruit grower cannot store the fruit quickly after picking in a distant warehouse. He does not employ enough labor, nor does he grow sufficient fruit that ripens at one time to make a carload quickly. A common practice, especially among apple growers, is to hold the fruit in the orchard until a carload is ready for shipment, or the entire crop of fall and winter fruit may be picked before the packing is begun. Under these conditions the delayed fruit ripens rapidly and the apples enter the warehouse in all stages of maturity. These naturally break down at various times in the storage season. On the other hand, if the grower sells at the harvesting time he is obliged to accept the price fixed by the temporary condition of the fruit trade. From the business standpoint, it may not be advisable for the average farmer to attempt to store his own fruit and sell it later in the season, but for the specialist in fruit growing, the local warehouse provides a means of holding the fruit in prime condition during the warm fall weather and places him in the most favorable position to sell it later in the season either to a buyer or on the general market.

The farm or local storage house is of still greater importance to the grower and shipper of perishable fruits, such as the small fruits, the peach, and the pear, in providing a means of properly preparing the fruit for long distance shipment. Many of the losses which occur while fruit is in transit are due to the ripening and to the development of diseases that take place before the temperature of the car is sufficiently lowered, either by ventilation or by the melting of the ice. It is not uncommon for peaches to reach the market with a loss of five to 30 per cent. in the top layers of the car. This is due to the unequal distribution of the temperature in the average refrigerator car and to the small order of ice.

From extended experiments in shipping peaches from southern to northern markets in 1904, the United States Department of Agriculture found that the fruit could be landed in perfect condition and that it could be held in the car a much longer period on arrival at destination when it had been cooled to about 40 degrees F. quickly after picking and before loading in the refrigerator cars. The same principle will apply to the export shipment of peaches, pears and early apples, and to the distant shipment of small fruits.

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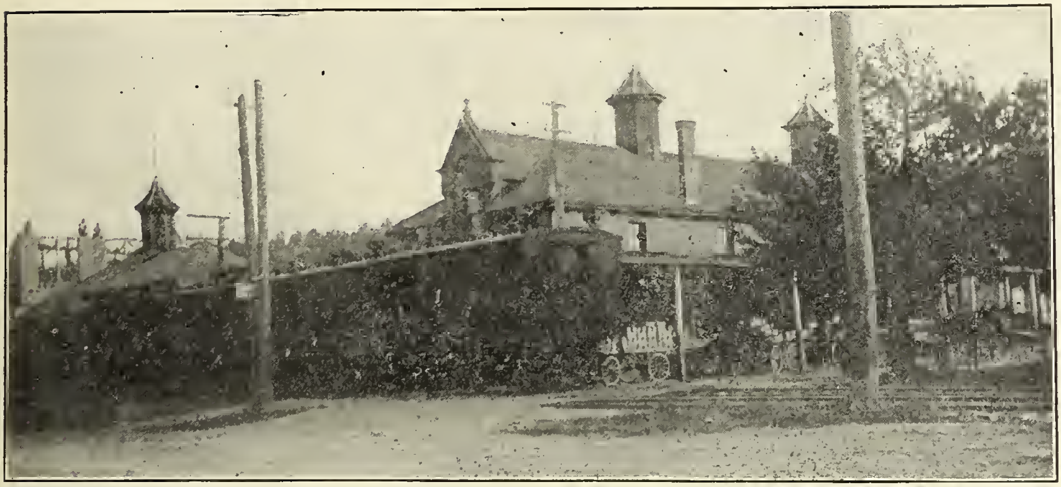
* Extract from an address delivered at the last annual meeting of the Ontario Fruit Growers' Association.



Shipping Fruit in the Niagara District

The shipping station of Mr. E. D. Smith, of Winona, is here shown with ventilated cars being loaded. This station is equipped with a cold storage plant and annually handles immense quantities of all kinds of fruit. On the left may be seen Mr. Smith's new jam factory in course of erection. This building has been completed since the photograph was taken.

The principle that we wish to emphasize by this phase of the discussion is that fruits of all kinds, whether they are intended for storage in warehouses or, like the perishable fruits, are shipped to distant markets, need to have their ripening processes checked as soon as they are picked, as the ripening that takes place in the orchard or in transit is at the expense of the keeping quality and value on the market or in the warehouse.

A phase of the question that should logically precede all others is the care in handling and preparation of the fruit. The most serious rots in northern apples and pears in transit and in storage are often the direct result of bad handling and packing on the part of the fruit grower or dealer, coupled with a delay in storing the fruit, during which time the rots enter the bruised parts and develop.

The common soft storage rots of apples and pears, which are caused by moulds, do not affect unbruised fruit. They gain entrance only when the skin has been broken by rough picking, or sorting, or by the movement of the fruit in loosely packed packages during shipment, and kill the fruit prematurely. On the other hand, an unbruised fruit lives until it has spent its vital forces through natural chemical and physiological changes, when it dies from old age.

Not in the history of commercial fruit growing has the influence of the careful preparation and handling of fruit on its keeping quality been emphasized as it was at the horticultural exhibit of the World's Fair at St. Louis. Several of the states kept the tables well supplied with magnificent apples of the previous year's crop throughout the exposition. The principal part of the fruit exhibit to September 15 was made up of fruit of the crop of 1903. There was a wide variation in the keeping quality in the fruit from different states, and, in my judgment, this variation was due more to the preparation of the fruit for storage than to the conditions in the particular section in which the fruit was grown.

We do not underestimate the influence of geographic and climatic conditions on the keeping of varieties, and we do believe that the success that was achieved by the various localities in showing their fruit products at the exposition was due not only to the natural resources of the locality, but even more to the skill and care of the men who handled the fruit from the tree to the show tables. A similar exhibit of storage fruit could not have been made at the Columbian Exposition in 1893. The progress since then has been due not so much to the methods of cold storage as to the fact that we have learned that fruit should develop full size and high color before picking, that in the handling it should be treated like a delicate living body, that heavy wrapping protects it from bruising, that it should be packed in small packages, shipped immediately to a warehouse and stored in a temperature of 29 to 31 degrees F. We need to apply the lessons of this great exposition to the handling of fruit for commercial purposes.

COOPERATION

MAXWELL SMITH, FRUIT INSPECTOR, VANCOUVER, B. C.

COOPERATION is a uniting of efforts for mutual profit and improvement without injury to anyone, and not a combining of forces to crush competitors for the purpose of building a temple of fortune on the ruin of a weaker rival. True cooperation cannot fail to produce the most salutary effects upon those who profit by its practical operations and to raise its votaries to a much higher plane than can possibly be obtained under the ordinary competitive system. It is not a means to an easy living without the toil of hand or brain, but provides a just remuneration for both, and gives men a clearer conception of the innate dignity of honest labor. Cooperation does not require the subversion of law or existing institutions, the annihilation of the capitalist or the overthrow of labor unions and other organizations. It encourages individual efforts by rewarding according to merit and pays capital its reasonable hire, but the profits go to the producer and to the consumer.

A cooperative organization cannot be made proof against wrong doing on the part of its members. It is subject to all the dangers of mismanagement the same as any other business concern. Cooperation is of paramount importance to the horticulturist. As we travel about the country many worthless orchards arrest our attention. The owners are often discouraged and disappointed men, who have practically lost faith in the fruit business. These conditions may be the result of planting varieties that are not suited to the locality, want of proper cultivation of the soil, the lack of proper attention to spraying, or the absence of good judgment in pruning and training the trees.

PROFIT BY OTHER'S MISTAKES.

But, whatever the cause may have been, the ugly fact stares us in the face, of time, money and toil wasted and only a miserable failure as the result. How often have we seen this in the case of pioneers, while those who come later, plant and raise beautiful orchards that pay the owners handsome profits; and people wag their heads and sneer at the pioneer in his misfortunes, forgetting that by his mistakes and failures he may have saved his new neighbor from a like fate and made the latter's success possible.

Strive to profit by the experience and research of those who have been successful in their particular undertakings. Seek to emulate the example of those who walk the highways of success in your chosen calling. But while our eyes are fixed upon the few who have been pre-eminently successful, we must profit also by the experience of those who have failed. Let us be honest enough to acknowledge the debt which we owe to them.

Have patience with the man who has made mistakes and despise not the counsels of your neighbor who has failed—he may have paid the price of your successes—but seek to avoid the errors which resulted in that failure, and if he still remains, cooperate with him for your mutual advantage and the world will be better for your both having lived in it.

Fruit growers should come together and mutually profit by past experiences, observations, successes and failures; cooperate in determining what is best to plant; cooperate in methods of planting, pruning, spraying and cultivating; cooperate in picking, sorting and packing; cooperate in shipping and marketing; cooperate in maintaining uniformity of prices according to grade, so that every man may receive the just reward of his labor.

TRIAL SHIPMENTS TO THE WEST

GOOD work is being done by the St. Catharines Cold Storage and Forwarding Co. in the matter of experimental shipments of small fruit and tomatoes to Winnipeg. An attempt is being made to have two cars go each week. "This year the work is being done to supplement that done last season by Prof. Reynolds, of the O. A. C., Guelph," said Mr. W. H. Bunting, of St. Catharines, honorary president of the Ontario Fruit Growers' Association.

Different types of cars fitted with different cooling systems are being tested. Mr. W. W. Moore, of the Markets Division, Department of Agriculture, Ottawa, has promised to furnish thermographs for the cars. "The Provincial Fruit Growers' Association," said Mr. Bunting, "purposes sending along practical men to superintend the shipments, watch conditions en route, and sales in Winnipeg.

"A new package is being tested for peaches and the finer fruits. The dimensions are 20 x 14 x 4½ inches, and four small baskets can be placed in each of these. When full of peaches the total weight is about 18 pounds. At present it is being used for western shipments, but we intend to introduce it on the Ontario markets also for the extra fine fruits."

The first shipment was made August 18, but owing to the light tomato crop and to the fact that some factories are paying 30 cents per bushel it was difficult to obtain sufficient tomatoes to make up the load.

"The packing," remarked Mr. Robert Thompson, "is being done in boxes chiefly after the California style. This is strictly a business deal of our own. Express charges are $2.40 per 100 pounds, whereas by sending a carload we get the 66 cent rate. In addition to this we have to pay for the icing. Past experience has shown that the heavy express charges run away with the profit.

"We are trying the fancy packages to find out whether it will pay to put them on the western market. In Toronto and Montreal it pays early in the season when fruit is scarce, but later on the cheaper package is necessary. As soon as the consumers are educated to pay the price, the growers will put the fruit in the proper packages."

I have observed that the bark of your trees in Canada is much rougher than with us in the Eastern States. It must be due to the colder climate.—(A. N. Brown Wyoming, Delaware.

Bandages on Trees are a good means of fighting the canker worm, provided they are properly looked after. Where they are left on pear trees blight sometimes starts under the band.—(M. Pettit, Winona, Ont.

Picking and Handling Apples

W. H. DEMPSEY, TRENTON, ONT.

The picking should be done only by very careful hands. No apple, no matter how firm, has been found that will not show marks of rough handling, revealing brown spots and giving it the appearance of a windfall. The baskets should be lined with heavy burlap to keep the fruit from bruising against the sides, and if the fruit is to be kept by the grower until shipped to market I find it better to place them in barrels in a cool place the same day they are picked. They should not be touched until ready to pack for shipping.

A great deal of choice fruit is destroyed by too much handling, placing them on the packing table, putting in baskets, then into the barrel where they are allowed to remain in the orchard until cold weather, then placed in the storage building, emptied on the packing table, sorted and packed for shipping. They are more or less damaged by so much handling.

Wood Ashes in the Orchard

PROF. R. HARCOURT, O. A. C., GUELPH.

How heavily should wood ashes be sown in orchards ?—(R. Robinson, St. Catharines.

It is estimated that 20 crops of apples will remove more than twice as much nitrogen, one and a half times as much phosphoric acid, and nearly three times as much potash as 20 crops of wheat. A crop of wheat will remove about 40 pounds of potash per acre, therefore a crop of apples will take 100 to 120 pounds of potash per acre from the soil. As ashes contain five per cent. of potash, it would require one ton of ashes to supply that amount of potash removed from the soil by one crop of apples. This may be looked on as the minimum amount of ashes for an orchard in bearing. The best time for the ashes to be applied is in the early spring or summer. The potash in them is immediately available and may be taken up by the plants at once.

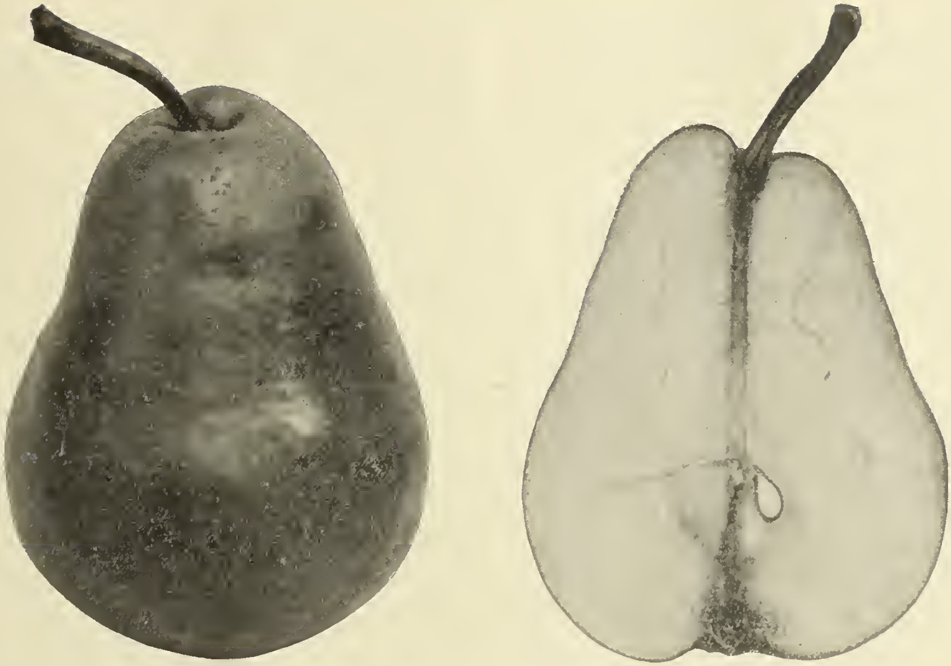
As to whether they will hurt a growing crop, such as vetches or crimson clover, if applied when the leaves of these crops are dry, ashes might sift through to the ground readily and no harm might be done. If they are applied while the leaves are wet they would seriously burn and destroy the leaves. If the cover crop is plowed down in the spring the wood ashes might very conveniently be plowed down with them. A good plan is to cultivate the ashes into the soil and not plow them under. Although the potash of wood ashes is soluble and immediately available to the plant, there is not much fear of serious leaching of this constituent from the soil. Nature has provided means by which it is held in the soil, and, therefore, not subject to loss by leaching, as is nitrogen.

Planting Peach Trees

"HOW far apart do you plant your peach trees?" was asked Mr. Adolphus Pettit, of Grimsby, recently by an editorial representative of The Horticulturist. "In the past," replied Mr. Pettit, "I have planted them 18 to 20 feet apart, but I find that rather close on my soil which tends to luxuriant growth.

"Were I setting out an orchard now I would set the trees 25 feet apart to allow a free circulation of air and plenty of sunlight. This would also allow lower headed trees. Where trees are planted too close together they grow high and the lower branches die. When planted 25 feet apart berry bushes can be grown in between, which I have found is advantageous."

In this part of the township apples are the main fruit crop, and the price has been so low that some are cutting down their orchards.—(N. B. Hagar, Allanburg, Ont.



The Wilder Pear

LINUS WOOLVERTON, POMOLOGIST, ONTARIO DEPARTMENT OF AGRICULTURE.

The Wilder is a valuable pear for either home use or near market, ripening about the middle of August. It takes its name after the late venerable Marshall P. Wilder, the honored president of the Massachusetts Horticultural Society. It was not originated by him, but was a chance seedling found growing on the north shore of Lake Erie, and was named in his honor. When ripe the coloring of this pear is a deep red on yellow ground, and shows up very attractively when placed on sale. Many of the early pears, notably the Summer Doyenne, ripening in July, the Manning's Elizabeth and the Dearborn's Seedling, ripening in August are too small to bring much money, but the Wilder is of fairly good size, often measuring three inches in length by two and a half in breadth. The quality is excellent, the flesh tender and fine grained, and the flavor sweet, aromatic and very pleasant. I would advise growing this pear on the quince, judging by my own experience at Maplehurst, where the dwarf trees are doing well.

IMPORTANT BULLETINS

AN interesting bulletin has been issued recently by the New York Agricultural Experiment Station treating on the plant-food constituents used by bearing fruit trees. Investigations were made to ascertain the amounts of nitrogen, phosphoric acid, potash, lime and magnesia used in one growing season by growing fruit trees. One to three typical representatives of standard varieties of apple, peach, pear, plum and quince were selected. The fruit, leaves and new growth were carefully gathered and analysed.

It was found that peach trees used the most plant food per acre. Apple and quince trees were about the same and came second, while plums gave much the same results and used less plant food than the other trees.

The proportions used by the different trees were approximately as follows: Nitrogen, 1 lb.; phosphoric acid, .27 lb.; potash, 1.14 lbs.; lime, 1.35 lbs.; magnesia, .45 lbs. In the fruit, quinces used the most nitrogen, with apples, peaches, plums and pears following in order. Potash was present in the fruit in larger quantities than any other food constituent. Nitrogen was found to be about half as much as potash.

Plant food was more abundant in the leaves of the peach than in those of the other trees, after which came the apple, quince, pear and plum trees in the order given. Lime was present in the leaves, and in the new wood in greater quantities than any other food. In new wood the amount required per acre was greatest in the case of peach trees. Write to Geneva, N. Y., for Bulletin 265.

APPLE CULTURE DISCUSSED.

In Bulletin 144, of the Ontario Agricultural College, Guelph, "Apple Culture" in its more important phases is dealt with rather exhaustively. After referring to the demand for nursery stock, Professor Hutt gives some valuable advice regarding the selection of varieties suitable for different sections and classifies them into those suitable for market and those for home use, giving a list of summer, fall and winter varieties recommended by the Ontario Fruit Experiment Stations.

The location, exposure, windbreaks, preparation of soil, arrangement of trees, distance apart, cultivation, cover crops, grafting, pruning, harvesting, grading, marketing, storing and practically every operation connected with apple growing are fully dealt with. Professor Hutt concludes his part of the bulletin by a calendar of operations which the orchardist should pay attention to each month of the year.

A few pages are devoted to the injurious insects which trouble the apple orchard. Professor Lochhead classifies these into insects affecting the roots, insects affecting the trunk, twigs, or branches, insects attacking the buds and leaves, and insects attacking the fruit. The pests commonly found in Ontario orchards and the most approved methods of combatting each are fully dealt with.

Fungous diseases are discussed and classified. The preparation of the best insecticides and fungicides, a few hints on orchard spraying, and a complete spray calendar for an apple orchard completes this very excellent bulletin. Every orchardist should write to the Ontario Department of Agriculture, Toronto, for a copy.

A CORNELL BULLETIN.

Another bulletin of special interest to orchardists is No. 226, entitled "An Apple Orchard Survey." The purposes of the survey were to correlate soil characters with orchard conditions, to compare successes and failures and ascertain underlying causes, to investigate methods of orchard management and determine the influence of each, and to collect data on practical apple-growing which would furnish indisputable evidence to assist horticultural instructors.

These purposes were well carried out in a thorough examination of numerous orchards in Wayne county. Every branch of work connected with the production of the apple crop receives due attention and increased value is given to the work by the use of numerous illustrations. After careful investigation it was concluded that tillage, fertilization, pruning and spraying are the chief factors that enter into good care of an orchard, but that one or more of these may be omitted for a time without serious results. To some extent tillage may replace fertilizers; a thrifty orchard may resist the attacks of disease; or some seasons may find few insects and spraying can be discarded. However, the most successful apple grower is the one who keeps a proper balance between all four agencies. He must also study and learn something about the life processes, about insect and fungous diseases, and about drainage and other soil problems. This bulletin is issued by Cornell University, Ithaca, N. Y.

Spraying is more generally practised now than a few years ago. Growers are beginning to see the need of better spraying, cultivation and general care of their orchards. —(A. E. Sherrington, Walkerton, Ont.

My peach trees have been badly troubled with the borer. I find the only way to keep them in check is to go around with a good stiff knife with a sharp turned up point and dig them out.—(C. S. Nelles, Grimsby, Ont.

NEW METHODS WITH STRAWBERRIES

ALTHOUGH the ordinary methods adopted in strawberry growing are according to the matted-row system and the planting of a new patch each season, there are growers who practice novel methods and who are not afraid to recommend them.

"Strawberries grown in hills," said Mr. W. A. Best, of Picton, "give good returns. The runners are kept cut off continually, and as a result only one strong healthy plant is left. This method, of course, requires more labor than is entailed by the ordinary culture, but the quality of fruit amply repays the gardener. An extra crop of only number one fruit results and a better price is obtained. Besides, the patch need not be renewed every season. Cultivation can be done both ways.

"In the matted row the runners take away the strength from the fruit, and as a consequence fruit of poor quality is harvested. Cultivation can be done only one way, and that only for the first season. The weeds are sure to come and compel plowing down after one crop is taken."

ANOTHER METHOD.

Some growers take several harvests from one planting with the matted row system. "I have taken six fruitings in eight years off the same ground," said Mr. J. M. Metcalf, of Grimsby, to The Horticulturist. "The ground was put into good condition and as free from weeds as it was possible to have it before setting out the plants. When the crop was harvested the second year the whole patch was gone over with a mower. Then the plow was used, leaving about 10 inches of the old row bottom. After the plowing a good harrowing was given to tear it up well and destroy most of the weeds. The hoes were then used to complete the cleaning and the patch was treated as if newly set out in the spring.

"By this method it appeared as if the plants were all destroyed, but it seemed to set the young suckers to more vigorous growth. The quality of fruit on the sixth harvest was just as good as on the first. This process would not be thoroughly successful with all varieties. I have, however, had success with Jessie and Michael's Early. The plants must be strong growers, which will soon smother their own row and make good growth before winter sets in."

Small Fruit in the Orchard

ORCHARDISTS cannot afford to devote their land wholly to orchard purposes for the first few years after the young trees are set out. Different methods of using the ground are adopted in different sections. Some grow hoed crops, others grain and others some of the small fruits. The growing of grain is not to be commended, but the choice sometimes depends on the nature and condition of the soil.

"Where my trees are small," said Mr. J. M. Metcalf, of Grimsby, to The Horticulturist, "I always double crop. I like to have some of the small fruits, such as raspberries or blackberries there because the bushes prevent the snow from blowing away in the winter and so serve as a protection to the fruit trees. Besides the berries get the benefit of partial shade, and that suits them best. Too much shade would tend to make them soft and mushy, but the shade afforded by an ordinary orchard improves the quality.

"I sometimes use, potatoes, sugar beets, carrots, cabbage, etc. Corn is unsatisfactory, as it requires too much moisture late in the season when the trees need all they can get."

If I were going to plant a vineyard I would set out Concords. They are hardier than any other variety, seldom missing a crop, while the quality is of the best.—(Adolphus Pettit, Grimsby, Ont.

SMALL FRUITS FOR THE CANNERIES

FRUIT growers well know the difference in quality of different varieties of the same fruit. In berries this is especially noticeable. The tendency, however, with most growers is to buy the plants which they believe will produce the largest berry in the greatest quantity. This may seem plausible, but although size and quality are desirable features in a fruit the quality should be the special characteristic sought.

"The man who is likely to buy the fruit," said Mr. Wellington Boulter, of Picton, to a representative of The Canadian Horticulturist who visited his canning factory, "should be counselled every time by a grower before he purchases his fruit-bushes or trees. There are many varieties of the different fruits which all go to mush when canned. These varieties do not ship well. The tree agent sells to make money, but the grower also buys to make money. Therefore, he should have only the desirable and saleable sorts. The Cuthbert raspberry is the best. We often pay six cents per box for them when Schaffer only brings four cents. In strawberries we have paid one cent per box more for the Wilson than for other varieties. It is not as large as many of the others, but it is firm and purple or bright red in the centre, and it is quality that counts.

"In every case," continued Mr. Boulter, "the demand is the first thing to be considered. The fine arguments of fruit-tree sellers who claim certain varieties are the best simply because they want to get rid of their stock should not influence the buyer. The man who buys the product should be consulted and the recommendations of the agent ought not to be given too much weight."

White Grubs in Strawberry Plants

PROF. F. C. SEARS, WOLFVILLE, N. S.

Last season I planted about 200 strawberry plants. They were not strong and many wilted. This season they have practically all died. On examination of the roots I found a large white grub, which no doubt accounts for the death of the plants. What can be done to exterminate the pests from the soil? Will it be safe to set out new plants in the same soil this season?—(W. R. Wonham, Richelieu Village, Que.

These large white grubs are the larvæ of some kind of "June bugs" (some species of Lachnosterna), which live in the ground and feed upon decaying vegetable matter, especially barnyard manure. So far as replanting this same ground with strawberries this season is concerned I should advise strongly against it if there is any other land available. The particular "grubs" which have caused the damage this year will probably have changed to adult insects, but there will in all likelihood be a new crop ready to attack new plants.

As to ridding the land of these pests I would suggest fall plowing late in the season so as to throw up the grubs and expose them to the action of the weather. The object of doing the plowing late is of course to allow the insects no opportunity to readjust themselves for the winter.

Next spring I would use salty fertilizers, either wood ashes or muriate of potash, and if the soil needs nitrogen use nitrate of soda to furnish that, and lastly bone meal or some phosphate. In applying such fertilizers it is better to put on the entire lot at one time, as this makes stronger solutions in the soil water, which is unfavorable to the insect life of the soil or sometimes even deadly. If the land were treated in this way it should be perfectly safe to set strawberry plants on it in the spring, but I should consider it a very risky thing to reset this season.

Bulbous plants become sickly after being over fed. Starvation is the only remedy. Put them away to rest and merely give sufficient water to prevent total drying.—(A. J. Frost, Preston avenue, Toronto.

THE MAKING OF A SUBURBAN HOME*

S. SHORT, OTTAWA, ONT.

MOST city folk, at some period in their lives have a longing for country air and surroundings, a longing for freedom from city cares, for rest and quiet and a desire to dig in mother earth. This is a natural desire, and if gratified will, in many cases, result in indigestion cures, the upbuilding of shattered nerves and general good health. Visions of fresh eggs for breakfast, fresh vegetables gathered while wet with dew for dinner, and fresh berries for tea, all produced in the home, poultry yard and garden, furnish powerful arguments in favor of going to live in the suburbs, not to speak of the pleasure of sowing the seed and watching the growth of the plants and giving them such attention that when the time of the harvest comes the product will be the finest in the country side.

Having, therefore, decided to invest in a piece of land with a view to making a garden, the first question to decide is location. I presume, of course ,that the owner intends to garden during his spare hours and go to the city daily. In that case I would recommend that he locate near the street car line if possible. That is, I would prefer to pay more for land, or be content with a smaller lot near the car line than a more distant location. There may be in the family some members who would not take to the suburban life with the same zest as the head of the house, and they should be considered. Besides, a back ache sometimes forces its attention on the enthusiastic gardener and it is desirable to get to the car with as little exertion as possible.

The best time to inspect the different locations is just after the snow has melted in spring time. You can then see the state of the roads and how the land is drained. This is important for sanitary reasons. If the home is located outside the city limits the owner has to devise and carry out his own sewage system, so a slight slope is a help for that purpose as well as for good surface drainage. A slope to the north or

The Guelph City Hall as Improved

Excellent results would follow were more of our horticultural societies to follow the example of the Guelph Horticultural Society, which this year greatly improved the city hall and postoffice by placing handsome boxes in the windows. This work is appreciated by the thousands who pass these two prominent buildings.

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* Extract from a paper read at the July meeting of the Ottawa Horticultural Society.

west is preferable, for then the snow in spring melts slowly and the plants seldom suffer by too early exposure or by making too rapid growth and injury from frosts.

If the owner intends to live all the year round in the suburbs it is absolutely necessary that the public highway to and from his home should be high, dry and well drained. There is nothing that will cause dissatisfaction with the location more quickly than to have to travel over wet, muddy roads.

The next point to be considered is how much land to buy. That depends on individual circumstances. Some have more leisure time and more money than others. If the purchaser can afford to keep a hired man and a horse an acre more or less will be of small concern, but if he intends to do the work himself one half to three quarters of an acre is ample and will give his muscular energies the fullest scope.

To the man with limited means who wishes to cultivate his own garden and attend to the numerous chores incidental to a country home there are good reasons for saying that half an acre is ample to occupy his spare time. Unless the lawn is kept nicely trimmed, the flower-beds kept free from weeds and the vegetable garden kept in thorough cultivation, the owner's reputation as a gardener will suffer, and instead of having a home and garden to be proud of and to be shown with pride to visitors, he very soon tires of gardening and his career in the suburbs soon ends. To keep half an acre in proper order and cultivation, to attend to the poultry, to do a little painting and fencing when necessary will take the average man three hours every working day from the time the spring work begins until the middle of August, when the weed season is practically over. During May, June and July the grass must be cut at least once weekly, the flower beds weeded and raked once a week; in fact, every inch of land under cultivation, to be kept properly, must have weekly attention.

My object in stating these facts is that they may perhaps be a help, to an intending suburbanite, in deciding how much land to invest in for garden purposes, so that even though land be low in price in the outskirts of the city, he will not undertake to cultivate too much, and his garden, instead of being a pleasure become a burden. Having purchased the land, the next step is to lay out the grounds and garden to the best advantage. Before planting a tree or choosing the site for the house, by all means have a plan drawn to a scale. Then you have before you on paper the details in full of the work to be done. I would suggest dividing the half acre in two parts. On one half put the house, driveway, lawn, flower beds, outbuildings and poultry runs and reserve; on the other the fruit and vegetable garden. The driveway may be placed between the house and the fruit garden and the house between the driveway and lawn, which ensures you from having the owner of the next lot building close to your house even though he builds on the line between the properties. A border for flowers may be made around the lawn. It should end parallel with the rear of the house and be divided from the land in the rear by a trellis made with poultry netting, on which grape vines may be grown to screen the poultry houses and runs.

FRUITS THAT MAY BE GROWN.

In nearly all parts of this province the following fruits may be grown: Strawberries, raspberries, currants, gooseberries, apples, plums, cherries and grapes. Before planting, a list should be prepared and submitted to any local expert who will willingly advise the best varieties. At the start only plant varieties that have been successfully grown in your neighborhood. Avoid experimenting until thoroughly established. The number of fruit trees and plants to grow depends on the number of members in the family, the size of the garden, and individual preferences. One person likes strawberries, another prefers raspberries.

The small fruits and perennial vegetables should be grouped together. The fruit bushes may be planted next to the poultry runs, for then the fowls may be allowed to range through them without damage and to the advantage of both after the fruit has been gathered in midsummer. I would plant for a family of six persons two 40 foot rows of strawberries, 40 raspberries, six red, two white and two black currants, four clumps of rhubarb and 50 roots of asparagus. These should be planted in rows five feet apart the whole length of the garden to render easy cultivation by a Planet Jr. Cultivator.

A Part of the Lawn and Hedge in Mr. S. Short's Garden, Ottawa.

This garden, only a small part of which can be seen, was one of the leading winners in the Lady Minto garden competition in Ottawa last year. The picture is interesting in that it shows what may be done in home-building from very rough beginnings. About 12 years ago Mr. Short purchased a block of ground at Rockiiffe, in the outskirts of Ottawa. This land was in very rough condition, full of boulders and very uneven. Within a few years its owner has made great improvements. A splendid Norway spruce hedge, 250 feet in length, which was planted by the owner and personally tended by him, may be seen. It is one of the finest hedges in or about Ottawa.

If I were growing small fruit for market I would grow first the gooseberry, then black and red currants, and lastly strawberries and raspberries. Strawberries and raspberries must be gathered every other day or the fruit is spoiled, being over ripe, and the plants give up bearing. While it is a delightful task to gather three or four quarts of fresh strawberries or raspberries, it is most laborious and tiring to gather them by the dozen quarts. With gooseberries and currants there is a latitude of a week or 10 days in which to gather the fruit. The whole crop may be gathered at once and they will keep for a week. Raspberries and strawberries must be marketed at once or they spoil. Besides, gooseberries and currants are more profitable. A raspberry bush takes nearly as much space as a gooseberry, and a Downing gooseberry bush will bear annually 12 to 15 quarts and a raspberry two to three.

Next to the ground occupied by the small fruits and perennial vegetables the annual vegetables may be grown in rows to permit the using of the hand cultivator. A well stocked vegetable garden should contain the following: Cress, radishes, lettuce, green peas and beans, beets, onions, carrots, parsnips, tomatoes, turnips, cabbage, cauliflower, cucumbers, squash, celery, corn and potatoes. All these may be grown readily in most localities, and the owner should grow such quantities of each as will suit the size of his family.

Late cabbage and celery may be planted in the ground occupied early in the season by the green peas, which will be done bearing when the cabbage and celery are ready to be put out. The squash may be planted near the compost heap or manure pile and trained to grow over it and hide an unsightly spot. Some flowering plants should be grown in the vegetable garden for supplying the table with cut flowers. This saves cutting those grown near the house for ornamentation. All flowers and vegetables that need an early start should be grown in a hot-bed at home.

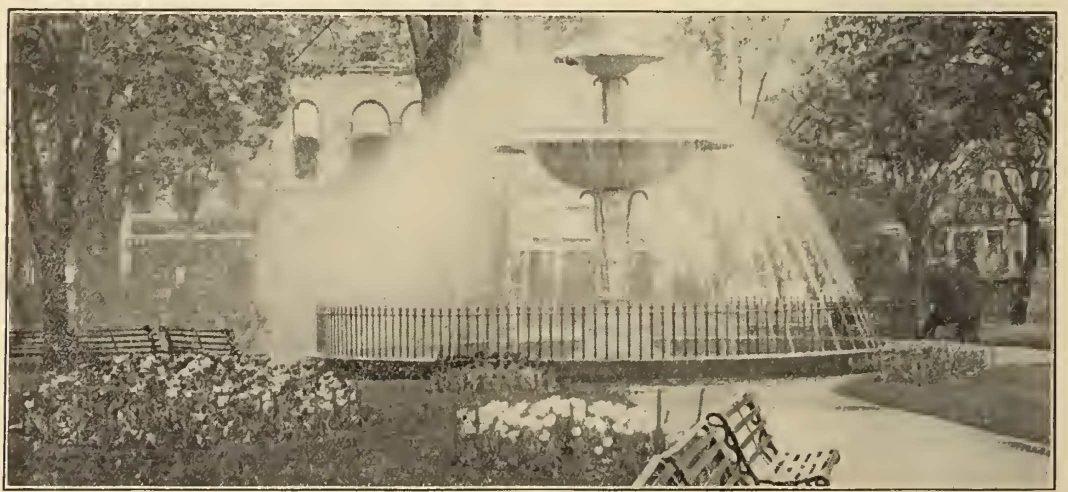
The principle of the proper management can be seen at a glance by visiting any gardener in springtime. In this way you can grow tomato, cabbage, cauliflower and celery plants and annuals that need an early start, such as aster, phlox, petunias, carnations, etc. This keeps down expenses and desirable varieties are ensured. Nor must the poultry be forgotten. For a family of six, 15 or 20 hens are enough. A cheap house, free from draughts, will do for them. Enclose the poorest ground for runs. They must be confined, but they should have at least 20 square feet for each fowl. Poultry netting is cheap and easily put up. Three runs are needed: one for the old fowl, one for the young, and a spare run.

A diary should be kept and a record made of the date of the last spring frost; the first fall frost; the dates of sowing the different seeds; the dates of their coming above ground; the date of the first flower blooms; the first and last ripening of the different fruits. This furnishes data to work upon in succeeding seasons.

EARLY FLOWERING BULBS

FEW plants give more beauty for the labor and expense involved in their culture than do the early-flowering bulbs. They are grown chiefly in Holland, but are easily handled in beds or borders in almost any garden. For best success it is well to prepare a deep rich bed in September and plant the bulbs four to six inches deep in these as early in the fall as they can be obtained. Most flower-growers have a few, but for a collection of numerous species there are not many who can present as fine a display as Mr. Thos. Bog, of Picton, Ont. "I get my bulbs direct from Holland," remarked Mr. Bog to a member of The Horticulturist staff, "and generally plant them in October. They must be planted when the ground is dry. If the ground is wet there will be no growth as the bulbs rot. It is essential that the beds be well underdrained. Sandy loam suits them best. They need frequent watering when growing and especially when in flower.

"I never let them go to seed, as that



Beds of Tulips in a Lovely Hamilton Park takes too much plant food from the bulb. The leaves, also, are allowed to die down, thus sending the strength back into the bulbs. In this way good strong bulbs are formed.

" I always leave them in the ground over winter. A liberal coat of manure is put on after the ground freezes. If put on before the frost comes the ground heats and growth is stimulated. Late spring frosts sometimes damage them. When left in the ground all the year round hyacinths last about three and tulips about seven years.

" The ground might be utilized for something else if the bulbs were removed, but that means a lot of work. I prefer to leave them there and set a few plants among them to add beauty after the bulb bloom is gone."

CHRYSANTHEMUMS IN SEPTEMBER

GEO. HOLLIS, BRACONDALE, ONT.

CHRYSANTHEMUMS should now be making great headway. The early varieties will be swelling their buds and should receive careful attention. Side growths, as well as large growths from the base of the plant, must be removed regularly. The stems must be kept well tied up, because no matter how good the flower a bent stem spoils its value in the market.

Some bone flour spread on the bench and covered with about one inch of rotten manure, helps the plants wonderfully. Good cow manure is the best.

The later varieties require much the same treatment, but if they are making a soft rank growth no manure should be added until the flower buds begin to swell. In case the plants are so soft that the sun causes wilting, less water should be added at the root, but syringing must be continued just the same. Plenty of air,also, is needed.

A thorough syringing with tobacco water is required once or twice every week to have the plants perfectly clean when the flowers open. Fumigation is also good.

The warning of last month regarding the chrysanthemum fly on pot plants outside needs to be repeated now. In some of my seedlings this pest was busy taking the points out of the growths, and the result was the plants had to be removed. This fly is the main drawback in growing chrysanthemums outside.

The plants grown in pots need plenty of room. A supply of manure water twice a week helps them. Horticultural manure is first class for this purpose, as it is clean to handle. If the houses have been whitewashed or the plants shaded in any way the shade should be removed during September.

Walks should be artistically laid out on each school lawn and be edged with blooming border plants. These would always receive the tender care of the pupils and thus by association they would learn to respect the flowers and shrubs of some one who is " almost discouraged " because of the vandalism practised by the youths of today while on their way to and from school. —(P. G. Keyes, Ottawa, Ont.

If we who have plants find them a delight, let us not be stingy with them, but when we have one to spare give it to some one who has none. Give the children cuttings to grow for themselves and so teach them to love and care for flowers. The finest coleus plant I have, and the little geranium slip with the largest bunch of blossoms, were planted by my little girl.—(Mrs. W. J. McLenahan, Appleby.

PLANTING PERENNIALS IN AUTUMN

ALTHOUGH perennials are so easily grown they are comparatively scarce in Canadian gardens. There are sufficient hardy varieties adapted to northern sections to brighten up the gardens in the coldest districts. The trouble is the people do not know the plants. In some cases success has been achieved with some common plants, such as the Sweet William, but the grower became tired of such commonplace specimens and began experimenting with new ones which are not so easily grown nor yet so beautiful.

The object should be to get those which add the most beauty and can be grown most easily. Although experiments should be carried on with new introductions, this should not cause the old stand-bys to be discarded. If the new plant is a success, get more of it, but also keep some of the kind which seems more common. What flowers give better effect than a bed of perennial phlox or some Rudbeckia or even a row of holyhocks?

The border represented in the illustration is composed of coreopsis and perennial poppies, which gave good bloom during the early part of the season, and different species of Boltonia, perennnal phlox and pyrethrum for bloom later in the season. This border produced a very striking effect.

The different perennials capable of enduring the most severe winters of Ontario are too numerous to mention. The attention required by them does not vary much. The common method of propagation is by root division. In past years the usual practice has been to do the transplanting in the spring of the year. Recently, however, many growers have been adopting fall planting, and in most cases success has been the result.

" Such plants as phlox, peonies, golden glow, bleeding heart and the German iris," said Mr. Geo. Long, manager of Wm. Rennie's greenhouses, to The Horticulturist a few days ago, " do better when planted in the fall. All those plants which make an early start in the spring can be set out about the last of September or early in October. This usually results in earlier bloom and a larger truss of better flowers.

" There are, however, some perennials, such as the hollyhock, which are very unsatisfactory when fall planting is practiced. The frost kills a large percentage of them.

Beautiful Border of Hardy Perennials

Root action does not become established before frosts come and the result is rot sets in.

"Many think that because fall planting is best in Great Britain it should also be the best here, but it must be remembered that the winters are much more severe in Canada than they are across the water. ,

"With those plants which do become established in the fall it is not unusual to obtain good bloom two weeks or more earlier. Phlox set out in the fall makes an elegant show by the middle of August.

MULCHING IN THE FALL.

"It always pays to apply a mulch if there is only one small row of plants to be attended. Strawy manure or some such covering suits well. It is not the hard frosts which do the damage; it is the alternate freezing and thawing—a hot sun during day time, then a cold night, and then a warm sun.

"The mulch should be applied after the frost comes to stay. The time depends on the season. If put on too soon growth is encouraged and the danger of the plants being injured is increased instead of lessened. In the spring it should be removed little by little as the spring opens up, having them stripped when danger of frost is past. This time, again, depends on the nature of the soil, the site, and other conditions.

"With very little extra work and small expense many an ugly corner might be made a place of beauty or an unsightly fence might be hidden by some of the taller species planted in a nice border in front of it. The ground must be well prepared. A good coat of manure should be dug in so as to have a rich soil.

"The ordinary barnyard manure, if well rotted, is better than commercial fertilizers. You can be sure of not overdoing the matter. With commercial fertilizers it is very easy to add too much and do more harm than good."

Garden Work in September

BEFORE heavy frost sets in procure a few evergreen branches and lay them over your pansies, then shake a covering of dry leaves over them. If you have a sash, place it on also, or a few old boards will answer the same purpose. The object is not to have your plants thaw out before spring, which they would do, if left uncovered, should there come a mild spell during the winter.—(E. F. Collins, Toronto, Ont.

Although chrysanthemums are almost hardy, they must not be exposed to frost, or even to continued cold, wet weather if good flowering results are to be obtained. Sprinkling the foliage early in the day on hot days will be very beneficial to the plants. As soon as buds are formed on the plants, liquid manure should be given them about once a week, until flowers are fully developed.

By planting two or three Roman hyacinth bulbs in a four or five-inch pot early in September, and plunging the pot outside in ashes or sand for three or four weeks, when the bulbs will have made good root, flowers can be had before Christmas time. Plant the bulbs about half an inch under the soil, so their tops are well covered, water them well once, and if well rooted the blossoms will repay the little trouble experienced in securing them.—(Wm. Hunt Guelph, Ont.

Some leave their house plants out too late. It is better to bring them in when the temperature of the house is about the same as outside. If left out too late, when brought in many leaves fall or turn yellow. —(Mrs. W. J. McLenahan, Appleby, Ont.

HARVESTING AND STORING ONIONS

"I USUALLY pull onions in September," said Mr. J. W. Rush, of Humber Bay, recently to a representative of The Canadian Horticulturist. "They should be harvested as soon as the tops begin to fall. When sown thickly and not thinned they ripen themselves and no rolling is necessary to cause the top to fall over. When thinned they often develop thick-necks. A thick crop and rich ground gives better returns and the onions always ripen better. After they are pulled they should be left on the ground to dry thoroughly. Two or three good rains do not hurt them; in fact, it makes the tops come off easily.

"Onions should be stored in a cool, dry place, with plenty of ventilation. They will stand five degrees of frost in the field, but after they have been stored frost causes the outer layer to rise and peel off. A temperature just above freezing is best. When put on shelves they can be piled six or eight inches deep. The onion house should be by itself, as the dampness due to the evaporation of other vegetables causes the onions to sprout.

"I once knew a field of onions to be left out until near the last of October. They were then taken in and piled about seven feet deep in a cellar. It so happened that these kept well and not very many were lost because they were cool and dry when put in. I would not, however, advise this method.

SMALLER ACREAGE.

"Several growers in this section," remarked Mr. W. C. McCalla, of St. Catharines, to a Horticulturist representative, "have an acre or two of onions. Others planted some, but the rapid growth of weeds during the wet weather of early summer forced them to plow their patch up. The weeds were not fought in time, and as a consequence the young onions were smothered out.

"A few good crops remain, but in the main they are below the average in size and quality. As soon as they are ripe they should be harvested. The time of year that the tops go down and shrivel depends on the weather. If they are sown early and the summer months are hot and dry they may be harvested in August.

"There are two ways in which onions may be stored. Some put them in a mow, and when they are frozen solid cover them with straw or hay and leave them thus frozen throughout the winter. This one freezing does not do any damage. It is alternate freezing and thawing which destroys them. The chief objection to this method is that they cannot be got at readily when wanted and they cannot be handled when frozen without damage.

THE BEST METHOD.

"The other and the most approved method is to pull and leave them in the field until thoroughly dry. Then, store them in a cool dry place. A cellar that will keep potatoes might not do for onions. The best plan is to put them on slatted shelves in thin layers about eight or 10 inches deep. Some growers have obtained satisfactory results by storing their onions in slatted tomato crates. The main thing is to have plenty of ventilation and no moisture or frost."

"Up to the last two seasons," said Mr. Geo. Benner, of Burlington, "I have been able to pull my onion crop in August, but last year and the year before it was September before they were ripe.

"When they have thoroughly dried I take them into the storehouse. They must be stored where it is dry and free from frost. A temperature just above freezing suits them best. Warmth and dampness causes them to sprout. I place them about a foot deep on a network of fine mesh chicken wire on frames. They also keep well in slatted bushel boxes, but if in bulk they draw moisture and sprout."

CELERY GROWING

THE fleshy leaf stock of the celery plant is much prized as a table delicacy. It is not before this edible part of the plant has been thoroughly bleached, however, that it is in fit condition for the table. Owing to its increasing popularity it is gradually becoming more widely cultivated, but even yet there are countless gardens where a supply of this crop is unknown.

Although a lover of soil rich in nitrogenous matter, it can be grown with fair success on most soils if sufficient manure is added and frequent watering given during the summer. A retentive well-drained rich black loam seems to suit it best. Too much moisture is just as harmful as too little.

By starting the seed in the house or in hot beds and growing both early and late varieties, this wholesome vegetable may be kept on hand from July until well on into the winter months. Large growers with special storage cellars always have a good supply in late winter.

"The best varieties," said Mr. J. E. Terrill, of Picton, to The Horticulturist recently, "are Paris Golden for early and Evans' Triumph for late crop. I am growing those varieties exclusively this season. A low black well watered soil suits the celery crop best. I set the plants out in trenches. A plow is used to make a trench five or six inches deep. In this a few inches of well-rotted manure is put and dirt is put on top. The whole is well tramped and the plants set in this.

"I always bleach the early varieties with boards about 10 inches wide. With the Evans' Triumph some dirt is piled along to give the head shape, but as a rule bleaching early varieties by banking with earth results in rust, and that spoils the sale.

"Late celery is planted in trenches four feet apart. As the plants grow the banking up is done by a celery-hiller, and I find it does the work well. A man goes along to pack the dirt tightly against the plants. This makes just as good a job as by using the hoe, and twice as much can be done in the same time. The Evans' Triumph is a good keeper and will bleach in the cellar by about February 1.

"The crop is put into a large frost-proof storehouse 100 x 30 feet. For winter use it is well to leave the crop in the field as late as possible until the temperature of the cellar is lowered. The best temperature is about three or four degrees above freezing. There is a driveway up the middle and the plants are set in sand. They are packed closely, only the roots being covered. No water is added, and we never lose any because of wilting."

ANOTHER GROWER'S METHODS.

"For summer celery," said Mr. Wm. Waller, of Bartonville, "I grow the Paris Golden because there is a better demand for it on the local market. It is tender and easily bleached. I grow between 30,000 and 40,000 per season. Planting is done in trenches three feet apart, and the plants are put six inches apart in the row. Too much time and labor are required to dig manure into the trenches. As fine a crop can be secured by adding plenty of manure and plowing it in well in the spring shortly before planting. This supplies sufficient nourishment.

"Bleaching is best done by means of boards. They should be used when the plants are about one foot high.

"For winter use the plants are stored in a cellar with a sand floor. If they are to be kept for a long time it is best not to pack too closely, and they should be repacked once every three or four weeks and all leaves which show signs of rot or rust removed. Water should not be added. Plenty of ventilation is desirable, but frost should be prevented. Celery will stand slight frost when growing in the field, but not when in the cellar."

THREE VARIETIES.

"There are three varieties of celery," said Mr. W. A. Best, of Picton, "which I know to be all right: the Dwarf Silver for summer, the Golden Self-bleacher for fall, and the Golden Heart for winter. White plume is pretty but tasteless, and of very poor quality.

"Some growers recommend growing celery in beds, but I do not favor that method. More plants can be grown on the same ground space, but it requires more labor and more watering. Besides, the soil must be very rich and the plants are liable to rust.

"I do not, however, favor planting in trenches. I make a small furrow with a Planet Jr. wheel hoe and put commercial fertilizer in the bottom of this and mix it up well. No work should be done among celery plants while they are wet after they are six inches high, as it is liable to cause rust or rot.

"Best results are obtained by bleaching with boards. Very frequently hilling up the summer varieties with earth causes rot. Late celery may be banked up in September so as to have it partly bleached when it goes into the storehouse in October. The plants should be perfectly dry when stored."

MUSHROOM CULTURE

To be a successful grower of mushrooms the work should not be restricted by any set of rules, as there are few people who uniformly succeed. The work must be regulated by conditions and the location of the beds. The same rules would not apply to all conditions. By practice and experimenting a method may be developed which, with a little persistence on the part of the grower, may result in success with mushrooms.

The method which has proved successful with one of the largest growers in Toronto is here described. This grower believes that in mushroom growing there are three prime requisites: decaying vegetable matter, a uniform and rather low temperature, and a steady supply of moisture. The decaying matter is supplied by horse manure, which should be obtained as fresh as possible. It is necessary to produce the required heat. This applies more especially to the fall of the year, as in the summer there is too much heat, which has to be reduced by mixing soil with the manure. The manure should be piled in some sheltered place and there allowed to ferment and heat. The pile should be turned at least once a day, perhaps more frequently, depending on how high a temperature is attained. The heating itself is, perhaps, of no advantage except for the fact that it contributes to the decay of the material.

Manure should stand about three weeks, and when it ceases to supply an increasing amount of heat it should be put in the beds. The temperature at this time should not go beyond 120 degrees. The beds may be on raised benches or on the ground, but they should have a dry and warm bottom. Raised benches have proved to be the best, as there is less draft and the temperature can be kept more even. They should be at least 10 inches deep when raised from the ground, or if ground beds are used it is well to have them 12 to 15 inches deep.

The manure should be packed close and in a uniform manner, but not too hard. The bed should feel somewhat springy. Leave the bed until it is found how high the temperature goes. After a temperature of 90 degrees has been obtained the mushroom spawn should be planted.

Great care should be taken in selecting only the best spawn. One of the methods of telling good spawn is by its appearance.

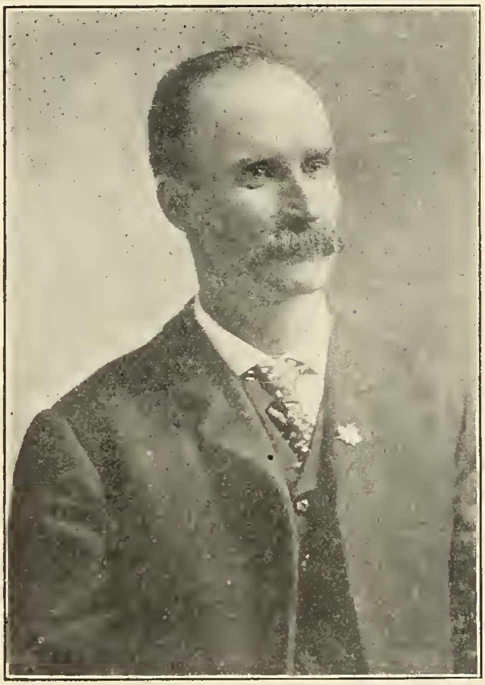
It should be of a bluish white color, and not inclined to yellowing, which invariably indicates that it is exhausted. The greater the number of white threads the more certain it is that the spawn has run too far. Fresh spawn should be obtained each year, and in planting it should be broken into pieces about the size of a walnut and put about eight or 10 inches apart each way. The depth of planting is regulated by the moisture of the bed. The greater the moisture the shallower the planting, but in any case do not cover them more than one and a half inches.

AFTER GROWTH BEGINS.

After the spawn has been left about 10 days it should show signs of running, and if it does it should be covered with one and a half inches of clay loam. After spreading the soil over the bed evenly it should be packed firmly with a mallet or brick, and then given a slight watering.

Should the temperature of the bed go below 60 degrees a covering of straw about six inches deep should be added. Care should be taken when this is done to avoid overheating. If signs of overheating appear remove the straw at once; if not, leave the straw on until mushrooms appear. This may be in four weeks or not until four months.

The temperature of the beds should never go below 60 or above 70 degrees after the spawn is in place. If the bed becomes dry it should have a slight sprinkling of water about the same temperature as the bed. As the crop increases more water is required.



The New President of the C. H. A.

Mr. Wm. Fendley, of Brampton, who was elected president of the Canadian Horticultural Association at its annual convention held in Montreal early in August, was initiated into the cut flower business, in the employ of the late H. Dale, of Brampton, 21 years ago. A few years later he began business for himself in a small greenhouse, 10 x 12 feet. He gradually increased his glass space, making a specialty of carnations and violets. At present he has 19 houses, averaging 180 feet in length, and is known far and wide as a successful violet and carnation grower. Mr. Fendley has been faithful in his attendance at the annual conventions of the association and, being well informed in regard to its work, should make a most efficient president.

In gathering the mushrooms they should be drawn out, not cut off, and the hole filled with soil. The best months for starting beds are September and October. About four months is the usual time a bed continues to yield a crop, and they should produce about one-half pound to the foot.

The changing weather conditions of the last few seasons have been rather discouraging to truck gardeners.—(J. W. Hyatt, West Lake, Ont.

The land must be in good shape and the work done scientifically to get returns from truck gardening.—(Earl Spencer, Picton, Ont.

In growing onions one of the main things is to have the crop ripe and cured before rainy weather comes in the fall.—(George Benner, Burlington, Ont.

The Canadian Horticulturist

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THE HAMILTON SHOW.

In the fruit and flower show which will be held in Hamilton September 12, 13 and 14, the fruit growers of the Niagara district and the residents of Hamilton have a splendid opportunity of which they should take every advantage. Owing to the fact that the provincial horticultural exhibition, which is held in Toronto in November, is too late for many of the early fruits, it was decided this year to hold an earlier show in Hamilton. The show this month is intended to mainly benefit the fruit growers of the Niagara district and also many amateur flower growers. Whether or not it shall be made a permanent affair largely depends on the interest manifested in it by the growers and by the citizens of Hamilton.

The prize list is sufficiently liberal to offer strong inducement for the fruit growers of the Niagara district to show what their far famed section is capable of in the way of fruit production. With proper management and the requisite amount of enthusiasm this show can be made a splendid annual advertisement for the district it is principally designed to benefit. As much will depend on the success of this first venture every person in any way interested should do his best to make it a success. In a matter of this kind a little work on the part of many will accomplish more than hard work on the part of a few.

A SPLENDID OPPORTUNITY.

Vegetable growers have long complained of the existing tariff arrangements which while shutting them out of the United States markets leaves them open to severe competition from the southern States. Carloads of vegetables are shipped from the south to Canadian cities, where they are often disposed of at prices below the cost of production in the centres where they are sold.

The fact that the tariff commission is to sit in leading centres, such as Toronto and Montreal, should be taken advantage of by the vegetable growers. While anything which will be likely to advance the price of vegetables will be certain to meet with strong opposition the vegetable growers have claims which deserve to be heard. By appointing a strong committee to prepare their case and, if necessary, by engaging a lawyer to present it, they should be able to impress both the commission and the public with the necessity for at least some change in existing conditions.

Every fruit grower in eastern Canada who can possibly do so should endeavor to attend some of the demonstrations in fruit packing that will be given during the next few weeks at different centres by the expert who is being brought from British Columbia. The great name California fruit has made for itself has been earned largely by the manner in which it has been packed. In this work, it has long been admitted, California has been able to give Canadian growers many pointers. If our growers lose this opportunity to gain suggestions for the improvement of their methods they are not the wide-awake men they are generally held to be.

The illustration in this issue showing the excellent work that has been accomplished this year by the Guelph Horticultural Society in improving the appearance of the hitherto almost ugly town hall draws attention to a line of work more horticultural societies could follow with advantage to themselves and the public. The improvement of neglected public places in this way will do much more for the cause of horticulture than a rather too free use, for instance, of society funds for the purchase of seeds and bulbs.

As soon as the Toronto exhibition is over the fruit, flower and vegetable growers of the province should set to work in earnest to get ready for the Ontario Horticultural Exhibition, which will be held in Toronto in November. The fact that the exhibition will this year be held in

Massey Hall will add greatly to its success. In Massey Hall it will be possible to show the flowers and fruit to every advantage, which, together with the central location, will result in a greatly increased attendance. The several conventions which will be held at the same time will be one of the best features of the exhibition.

That was a splendid idea, the holding of a joint picnic last month by the vegetable growers of the Toronto, Hamilton and Niagara districts. The more growers in any line can meet and fraternize the better for all concerned. The success of this first venture suggests that it may be possible to make a joint picnic of this kind an annual affair.

New Advertisers

Gould Cold Storage Co., Montreal.
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J. A. Simmers, Toronto.
Renfrew Nurseries, Renfrew.
Perkins & Paine, Port Dover.
Eben James, Toronto.

Best Spraying Mixtures

J. FRED. SMITH, SCALE INSPECTOR, GLANFORD, ONT.

During August I made an examination of the trees sprayed for San Jose scale in a part of the Niagara peninsula. Where the lime and sulphur had been prepared by the action of the lime alone the result is anything but satisfactory, but where the wash had been boiled by steam in the old way the results were the best that I have ever seen.

What the result may be in other localities I can not say, as I have not made any examination, but if they are anything like those I refer to the advice which the fruit growers received at a large number of meetings from a gentleman from the United States might better never have been given. If the lime and sulphur wash is properly prepared by boiling, and also properly applied, the scale cannot make headway.

A striking illustration of the value to Canadian shippers of the Fruit Marks Act is shown by the following incident, reported to the Extension of Markets Division, Department of Agriculture, Ottawa, respecting a shipment of apples by steamer Fremona, from Portland, Me.: "Besides the Canadian apples there were shipped by this steamer 992 barrels of United States apples, by different shippers, which on being landed over 50 were found to be without marks of any description. As a consequence the consignees wanted to pick and choose, thereby causing trouble and delay, during which the apples from the Canadian shippers had been placed on the market."

I am much pleased with The Horticulturist.—(Rev. J. Gandier, Newburgh, Ont.

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Those of our readers who are taking The Horticulturist through horticultural societies or fruit growers' associations will be allowed to retain a a liberal commission on all new subscriptions or we will arrange with the secretary of their society to extend their next year's membership.

Free sample papers will be sent to any one who applies for them.

WONT YOU HELP US TO REACH THE 8,000 MARK?

The Canadian Horticulturist

TORONTO, ONT.

OUR SPECIAL FRUIT CROP REPORTS

Correspondents from the peach, pear, plum and grape districts give rather glowing reports of these fruit crops. The pear crop is light, but all three others are much ahead of the crop harvested in 1904. So far there are but slight signs of rot in the grapes, although it has started in a few sections, while very few plums have been affected. The peach crop is above the average. The total number of bearing trees is below what it was in former years, which will affect the total yield and tend to prevent any heavy surplus.

IN THE DIFFERENT SECTIONS.

In the Lake Erie district the peach crop is about equal to that of last year, although one or two growers state that it is better. In the Niagara peninsula the correspondents, with one exception, report a full crop and good quality, while reports from Burlington say that it is 50 per cent ahead of 1904.

PEARS A POOR CROP.

Reports regarding the pear crop show no change from those received last month. Along Lake Erie it is placed at a light to medium crop, scarcely half as large as last year's. Correspondents from the Niagara section report a light crop, while Burlington growers have only about one-quarter as many as in 1904. In some sections Keiffer pears are reported as a heavy crop. Several reports from Simcoe county state that there is a better crop than was looked for early in the season, and that the harvest will be ahead of last year's. Ontario county growers are bothered with the pear scab.

THE PLUM CROP.

Early in the season reports from all sides placed the plum crop as extra large. The wet weather caused many to drop, however, and reports up to August 25th promise an ordinary yield. Some varieties have stood the unfavorable conditions better than others. Lake Erie growers state that last year they had none, or in some cases a few, whereas this year they have a full crop. Correspondents from St. Catharines give Japanese varieties full crop and American medium to light. The plum crop throughout central Ontario is medium to full except in Brant county, where several reports state that it is very light. In York and Ontario counties several districts are losing the crop owing to rot.

LITTLE ROT IN THE GRAPES.

Vineyards along Lake Erie promise about the same crop as last year. One grower in Essex says the crop is a failure. No mention is made of rot except in Welland county. In the Niagara district reports are all favorable and promise excellent quality of clean fruit or very little rot. As a rule the crop is more abundant than that of 1904. In the Burlington section the yield will be fully 50 per cent. above last year's.

THE APPLE SITUATION

High prices should rule this fall for apples. Reports received by The Canadian Horticulturist from all parts of Ontario show that the crop is not likely to total more than one-third to one-half as much as last year's, while the quality is little if any better. Should high winds prevail this month the total yield may fall short of even this estimate. This fact, taken in conjunction with the very small crop in Great Britain, and a considerable falling off in the yield in the leading producing sections of the United States and the Maritime provinces, indicates that there will be a marked scarcity of apples and that growers should realize high prices.

In Ontario, although buyers have been scouring the country, growers have been holding their crops. As a result not many sales have been reported to date, making it difficult to estimate what the final ruling price will likely be. In the St. Catharines district the crop is reported very light, with a heavy demand, and some sales being made at $1 to $1.25 per barrel on the tree. In the Grimsby district one-quarter to one-third of an average crop is expected. Prices have been ruling high, growers asking $2 to $2.50 per barrel, packed.

Between Hamilton and Toronto a half crop of good quality is looked for; fall and winter apples selling for $1.25 to $1.50 per bbl. Along the north shore of Lake Ontario and in the Georgian Bay district not many sales are reported, although a few orchards have been bought. The crop is estimated at one-third to one-half last year's, and the prices being offered and paid range from $1 to $1.30 per bbl.

The following reports among many received by The Horticulturist will give a good idea of the situation :

THE ST. CATHARINES DISTRICT.

The apple crop is very light in this district, there not being one barrel where we had 10 last year. A few orchards are well loaded with clean, well grown fruit, while in other orchards the apples are crooked, uneven and wormy. In the majority of orchards there is little or no fruit. Buyers are offering one dollar per barrel on the trees for No. 1—2. In two instances, for good orchards, $1.25 has been paid on the tree, the farmer to board the hands and draw the fruit to cars. Some growers are holding out for higher prices, but these are men who have small lots.—(Robt. Thompson, St. Catharines, Ont.

NEAR GRIMSBY.

The apple crop in the Niagara district is an unusual failure. Not one tree in 10 has a full crop, and there is not one-quarter of an average crop. The Spy is the best; the fruit is clean, and about one-half the trees have an average crop. The fruit is going to be clean and well colored. Baldwins come next, with about half an average crop. Greenings are a failure, Kings and Russets light. Early apples are going at 20 cents a basket cash at point of shipment, which means about $2 a barrel. One orchard of winter stock near Grimsby has been bought for $700, in which there will be about 350 barrels, so I expect we should have $2 to $2.50 per barrel packed. The quality is much better than last year.—(L. Woolverton.

AROUND WINONA.

The apple crop in this section will run one-fourth to one-third that of last year. The quality is fair, not much fungus, but codling moth is much worse than the two past seasons. Very few sales have been made. One orchard has been sold for $1,000 and another for $700. The man who packed the $700 orchard last year says there is not over 350 barrels in it. In both cases the purchaser is to stand all expense picking, packing, etc. About $1.50 per barrel for the fruit picked is looked for here.—(M. Pettit.

THE BURLINGTON DISTRICT.

The apple crop in the Burlington district is not more than one-half of last year's; quality probably 50 per cent. better. Some sales, I am told, have been made at 80 cents per barrel for fall apples, to $1.25 and $1.50 per barrel for No. 1's and 2's, fall and winter, the grower to pick the apples and deliver same when packed to wharf or railway station. Probably 50 per cent. of apples in this district are in buyers' hands. —(A. W. Peart.

ONTARIO COUNTY.

Our crop of apples is about one-third of the 1903 crop. There will be a lot of wormy apples, but practically no scab. Fruit large and fine. Trees are not heavily loaded, and a heavy wind during September will play havoc with the crop. Almost all orchards are sold, sales having been made in every way. A good part are sold lump, and in many cases the full price has been paid in cash. One dollar per barrel for fall and $1.25 for winter apples seem to be regular prices. I think $1.50 has been paid for one or two extra good orchards. No sales have been made by the barrel as far as I know.—(Elmer Lick.

PRINCE EDWARD COUNTY.

The apple crop is 50 per cent. short. Farmers are holding until market develops. Apple buyers are in evidence up and down the country side taking in the situation. The fruit is of fairly good quality. No sales have been reported.—(John W. Hyatt.

EASTERN ONTARIO.

In the counties of Leeds and Grenville apples are a fair medium crop, about double the crop of last year. Snows, or Fameuse, are the leading variety, not many winters being grown, Russets and Canada Red being the chief varieties. Fruit and trees have been particularly free of insect and fungi attacks, but indications point to serious trouble with "spot" on Fameuse before picking, for the disease is spreading rapidly over the whole surface of the fruit on trees that have not been sprayed. I am spraying with Burgundy mixture to check the spread of the disease, which has started again where spraying was done earlier in the season with Bordeaux. Most of the orchards here have been sold at about $1 per barrel on the tree for 1st and 2nd quality. There will be very few apples held for late markets, as the tendency is to sell early.—(Harold Jones.

THE GEORGIAN BAY DISTRICT.

In most of the best districts the apple crop will not be more than 20 per cent. of an average. As regards size, apples will average larger than last year, and quality on the whole will be better. There have been no sales made in our immediate vicinity, that is Thornbury, Clarksburg, and 15 to 20 miles around about. There have been a few sales about Creemore, Cookstown, Stayner and Duntroon. One buyer told me he thought he would have about 4,000 barrels, and the highest price paid was $1.15. If this is so it will be about all the apples there are there. There will not be many sold here on contract. The growers are building one of the best fruit storage plants in Canada, which will be ready for the winter apples. The plum crop is also poor, except Lombards, which are very good.—(J. G. Mitchell, Clarksburg.

THE ESSEX DISTRICT.

The crop of apples is not as large as last year, either in size or quantity. The codling moth has got in its work more than usual. Not much spot or scab. I have not heard of any buyers looking after the crop. No price has been fixed.—(W. W. Hilborn, Leamington, Ont.

IN LAMBTON COUNTY.

The apple crop is not equal to last year's. In this district a good many growers have taken a great interest this year in spraying, consequently, although the apples are not thick, there is a fair quantity and unsurpassed quality. Other orchards that have not received proper attention produce only a light crop of poor fruit. The growers are holding on to their crops. I know of none having sold, and am not in a position to state what price they expect.—(Colin Johnson.

PROSPECTS IN THE MARITIME PROVINCES.

The apple crop in the Maritime provinces does not promise any better than in Ontario. Reporting from Kentville, N. S., Mr. Ralph S. Eaton, president of the Nova Scotia Fruit Growers Association, states that the general feeling throughout the Annapolis Valley is that the crop will be a very light one. The principal varieties, Gravenstein and Baldwins, with few exceptions, are not bearing this year. Reports from growers in other parts of Nova Scotia, New Brunswick and Prince Edward Island are to the same effect. Rev. Father A. E. Burke, president of the Prince Edward Island Fruit Growers' Association, states that fall and winter apples will be a light crop, not half of last year's.

IN THE UNITED STATES.

American Agriculturist, a United States publication, which makes a specialty of crop reports, announces that in many heavy apple producing sections of the United States there are slender prospects this year and that prices have opened on a high plane. In the Hudson River, New York, section buyers are giving $1.75 to $2 per barrel for fruit on the trees. In Michigan fine Duchess have sold for around $2 per barrel. It states that it is apparent apples will be contracted in the United States this year for more money than last year.

THE BRITISH APPLE CROP.

A report from Woodall & Co., Liverpool, England, says that the apple crop in the United Kingdom promises to be one of the poorest in many years. Out of 270 reports from the most important districts only three place the crop above the average, 44 placing it as average, and 223 under average. In many cases it is given as a total failure. Reports from Holland, Belgium and Germany also indicate small crops.

TOMATO SITUATION ENCOURAGING

The tomato situation, as far as the growers are concerned is, on the whole, encouraging. In the St. Catharines and Prince Edward county sections, two of the largest producing districts, while the crop of early tomatoes was somewhat larger than usual, there will be a marked shortage of the later varieties. In the Hamilton district, while there are possibilities that the crop of late varieties will be large, it is reported by leading growers that the canners will not be able to secure nearly as many tomatoes as they require. For this reason it is believed prices will be well maintained.

The following reports received by The Horticulturist, as late as August 25, from the leading growers in the main producing districts give a good idea of the situation:

PRINCE EDWARD COUNTY.

The crop of early tomatoes is somewhat larger than last year, and will be an average one, but the early varieties represent a small per cent. of the crop. The late varieties are still the leading crop for canning, and they are very poorly covered with fruit. I have not met a farmer who reports a full crop of the late varieties. If frost comes as early as last year the late varieties will be an entire failure, as we are later in ripening this year than last. Prices are 25 cents per bushel. The syndicate and independent factories appear to be willing to leave the situation alone. The crop here will be much less than an average one, both in acreage and yield.—(J. W. Hyatt, West Lake.

IN THE NIAGARA DISTRICT.

In this section the acreage planted to early tomatoes is at least double that of last year, and in general the crop has been good. The hot dry weather ripened them rapidly, and the price dropped sooner and lower than usual, so that the returns have not, on the whole, been satisfactory. Owing to the failure last spring of the Canadian canners and the growers here to come to an agreement as to contract price for late tomatoes the members of our association have greatly reduced their usual plantings. What are being grown are mostly for a new independent company, which, in May last, made contracts at 30 cents per bushel, and have now a new factory in operation. This, together with a probable shortage in the crop of late tomatoes, has stiffened the price, so that any one who has tomatoes not contracted for can readily obtain 30 cents per bushel—even for early ones. Outside of our association a number of new men were induced to contract for 25 cents. Many of these started late, and plants were often put on unsuitable ground and will not yield much of a crop. However, good plants set on suitable ground and well cared for promise a fair crop, provided the weather is favorable for the next few weeks.—(W. C. McCalla.

SITUATION AROUND HAMILTON.

The following statement as to the situation around Hamilton has been made to The Horticulturist by Mr. E. J. Mahony, president of the Hamilton Tomato Growers' Association :

Last January a well known Hamilton capitalist decided to establish a canning factory and contracted for about 40,000 bushels of tomatoes at 30 cents per bushel. Shortly after making these contracts the gentleman was induced to transfer them to the companies already doing business in the city, and it is generally believed that he received a very liberal remuneration for making the transfer. In addition to these 40,000 bushels the canners induced a number of inexperienced growers and also a few members of our association to sign contracts at 25 cents and the "rise." Now, the whole situation here may be found in the answer to two questions—first, will the canners receive a sufficient amount of tomatoes to fill their orders on these contracts ? and second, what is the position of those growers who have made no contracts and are still holding out for 30 cent contracts ? The factories in this immediate vicinity require annually at least 200,000 bushels of tomatoes. Of this amount less than 60 per cent. are contracted for. Even in the most favorable years less than 70 per cent. of the amount contracted for are delivered. On this basis of calculation the factories here are face to face with a very substantial shortage. It should also be noted that a majority of those who made contracts this year know very little of tomato cultivation, and in many cases less than 25 per cent. of the amount contracted will be delivered. To make matters still worse for the canners there is every indication that the late tomatoes will be a light crop.

Those growers who have refused to make contracts at 25 cents have no cause for regret. They have the satisfaction of knowing that they played the part of men, and have proven their loyalty to the growers' association and to the principle maintained by the association that the producer, as well as the purchaser, should have a part in fixing the price of his produce. They have, also, the additional satisfaction of being able to dispose of their tomatoes at a price equal to and even considerably in excess of 30 cents per bushel.

Those growers who have shown their weakness by making contracts at the prices dictated by the canners are in a much less enviable position. They are forced to endure the humiliation of being looked on as deserters by their brother growers, and, moreover, they are up against a financial loss of 5 to 10 cents on every bushel of tomatoes they deliver to the factories on their "25c.-and-the-rise" contracts.

HOPES FOR FUTURE.

We feel that our Hamilton Association, which have conducted the fight in this district, has reason to feel satisfied with the results. At the beginning of the year we entered the fight single handed without any provincial organization to support us, without any organ through which to explain our position, and with only a very limited knowledge of the situation in other parts of the province. To-day we possess all those advantages, and in addition to this our financial position is stronger than at any time since our organization three years ago. If, therefore, we find it necessary, we are in first-class shape to continue the fight for higher prices, not only for tomatoes, but also for other lines of produce as well.

THE HAMILTON FRUIT, FLOWER AND VEGETABLE SHOW

Great preparations have been made for the combined show of fruit, flowers and vegetalbe which will be held in Hamilton September 12-14. As the object of the show is to benefit the horticultural interests of the Niagara district, all the principal organizations in the district have been given representation on the board of management. The fruit prize list is worth about $500, the flower prize list $350, and vegetable $70.

His Honor Lieut.-Gov. Mortimer Clarke has been invited to open the exhibition the afternoon of the first day. Demonstrations in the cooking and preserving of fruit will be given every afternoon and evening by members of the Ontario Women's Institutes. Demonstrations in the packing of all kinds of fruit will be given the afternoon and evening of the first day by an expert from British Columbia, and at the three sessions the second day. Samples of fruit will be given free to all who attend the second day, and of flowers the last day.

Among the special exhibits will be one by the Ontario Agricultural College and one by the three fruit experiment stations in the Niagara district, under the direction of the superintendent, Mr. Linus Woolverton, of Grimsby. In addition to this a large part of the fruit exhibit at the Toronto Industrial Exhibition will be shown at Hamilton. There will also be exhibits by the canning factories and of spraying machinery, fruit boxes, best decorated dining room, etc.

Those on the committee of management include the officers of the Hamilton Horticultural Society and Messrs. W. A. Emory, of Aldershot, president of the Ontario Vegetable Growers' Association; M. Pettit, of Winona, representing the Ontario Fruit Growers' Association; A. H. Pettit, of Winona, representing the Niagara District United Fruit Growers' Association; E. J. Mahony, of Hamilton, president of the Hamilton District Vegetable and Fruit Growers' Association; F. Foster and W. E. H. Peer, of the Burlington Fruit Growers' Association, and P. W. Hodgetts and H. B. Cowan, of the Ontario Department of Agriculture. Arrangements are being made for reduced rates over the radial lines, and if possible, for excursions over the railways. It is expected there will be a large attendance of the fruit and vegetable growers of the Niagara district. Mr. J. M. Dickson, of Hamilton, is the secretary.

Experimental Canning Station.—If the Ontario government establishes an experimental fruit farm in the Niagara district would it not be a good thing to establish an experimental canning station in conjunction with it to test the best way of putting up fruits and vegetables, also approximating the cost of building and running? This would encourage co-operative canning among the growers.—(Thos. R. Stokes, Niagara Falls South, Ont.

BULBS FOR FALL PLANTING

Our catalogue of Bulbs, House Plants, Shrubs, etc., is now in the hands of our printers. . . .

DROP A CARD FOR A COPY.

THE WEBSTER FLORAL COMPANY, LIMITED

FLORISTS, NURSERYMEN AND SEEDMEN

HAMILTON, ONTARIO

The Apple Box

LINUS WOOLVERTON, GRIMSBY, ONT.

I was among the first apple growers in Canada to use the box instead of the barrel, having begun to use them for fancy graded apples wrapped in paper, 12 or 15 years ago. Every year I have been using them more and more freely, some seasons exporting from my own orchard several thousand boxes. At first I used a box measuring outside 12 x 12 x 24, sending it not only to the British market but also to Australia. Mr. J. S. Larke, Canadian commercial agent, took much interest in the experimental shipment, which went by way of Vancouver, at a through rate of $1 per box. These apples suffered from the heat of the tropics en route, but those arriving in prime condition sold for $3.75 a box. They were shipped early in November, and arrived at Sydney before the earliest Tasmania apples were ripe. Finding this size to be larger than most boxes used in the British markets, I adopted the smaller box, measuring inside 9 x 12 x 18, a fine little box for packing and for display, but this proved too small, taking four to the barrel.

I was a member of the committee of the Ontario Fruit Growers' Association, appointed at Walkerton to consider the best sized box to be used throughout the Dominion. We concluded first that a capacity of about one bushel was most desirable, being a measure universally adopted already, and considering the average size of the apples to be packed as No. 1 grade, we concluded that an inside measurement of 10 x 11 x 20 inches would be the most convenient.

Last year I used several thousand boxes of this size for export to Glasgow market. I found that the apples packed well in it, each layer taking about four apples wide and seven apples long, and four deep, or about 112 apples in all. If the apples were larger, as the Kings for example, the box would only take three layers deep.

It is of the utmost importance that we should reach uniformity in the use of boxes, for so long

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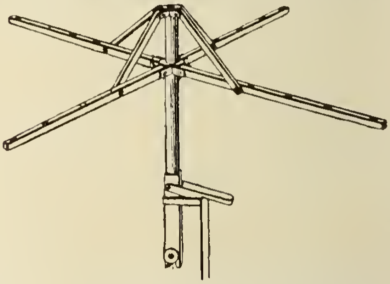
Fruit Commission Merchants
MONTREAL
Reliable——Prompt——Safe



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130 ft. of line
Write for our free illustrated circular.
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are not yet ripe, but the time for placing an order for nursery stock should always be RIPE. We grow the
Best Trees, Shrubs and Vines
Excellent specimens of **Maples, Elms, Lindens** and **Catalpas** for street planting always in stock.

MOORE'S EARLY
Salesmen Wanted.
Write for Catalogue.
The Helderleigh Nurseries
E. D. SMITH, Winona, Ont.

as a miscellaneous lot of sizes and shapes are used, growers can never expect to make sales f. o. b. by the box. This is the hope of our business, for with well defined grades, so that a distant buyer can know just what quality he is buying, and a uniform box and uniformity in style of packing, there is no reason why such sales should not be made, instead of the present ruinous method of consignment, leaving the distant buyer to put his own price on the fruit when it has, perhaps, crossed the sea.

A year ago I sold to a first-class house in Paris, France, a lot of my XXX boxed apples, Baldwins and Spys, at $1.72 delivered in Montreal. I had an enquiry again last year from the same house, but the excessive foreign crop prevented the deal. However, this points out the proper method of sale, and every means to that end should be encouraged.

I am inclined to think the penalty, 25 cents a box, too high, for the box itself only costs about 10 or 12 cents, and the size is only one bushel, which often sells in our own markets for about 25 cents. According to this section, if a man were by mistake to use a box varying ever so slightly from the measurements, and were shipping in thousand lots, his fine would amount to hundreds of dollars.

Dishonest Packing

The practice of topping or over-facing and dishonest packing of fruit generally is thus referred to in the Market Growers' Gazette, London, England.

"Honest packing is undoubtedly the keynote of the success obtained by the Canadian, Nova Scotian and French products. Salesmen have many classes of buyers to deal with, and if growers wish to reach the best buyers they must pack the best quality, for no buyers of first-class fruit will be deluded, at any rate twice, into buying a top layer of the finest fruit with nothing but inferior stuff below.

"If this secondary fruit had been carefully and fairly packed and sent separately, another class of buyer, the largest one, would have purchased it. This would mean much quicker sales, and for the whole consignment a better price. It does not follow that because a buyer should pack as though he had a conscience he should pack without using his intelligence.

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GRIMSBY

Drawings made to a scale, so that any gardener may carry them out. Correspondence solicited.

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Insist on having —WINDSOR SALT.

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AND STENCILS
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58 ADELAIDE ST. W. TORONTO.

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion; minimum charge, fifty cents in advance.

WANTED — SUBSCRIPTION CANVASSERS for The Canadian Horticulturist both in cities and in the fruit districts of Canada. Liberal commissions offered. Good men soon put on salary. Write The Canadian Horticulturist, Rooms 507-508, Manning Chambers, Toronto, Ont.

FOR SALE CHEAP—ONE OF THE CLEANEST and best equipped greenhouses in Toronto. Everything in splendid condition, carnations planted, excellent stock of ferns and general stock of plants, 10,000 feet of glass. Apply at once to F. C., care of The Canadian Horticulturist.

FOR SALE—FLORIST BUSINESS, WELL established in good residential part of Toronto; new brick store and dwelling; also greenhouses. These may be purchased separately or combined; owner has excellent reasons for retiring. A bargain if sold immediately. Apply to M. L., care of The Canadian Horticulturist, Toronto.

APPLE GRADER. A FIRST-CLASS PETTIT Fruit Grader, in perfect working order, for sale at a bargain. Address L. Woolverton, Grimsby, Ont.

"Bulb Culture for the Amateur"

10c

Address **Secretary Horticultural Society,**
195 Pretoria Ave., Ottawa, Ont.

Items of Interest

Practical lectures are to be delivered in the Dairy Building at the Canada National Exhibition, Toronto, at 2.30 p. m. during the fair. Those of special interest to readers of The Horticulturist are "Drainage of Farm Lands," by Prof. J. B. Reynolds, O. A. C., Guelph, September 1; "The Fruit Industries of the Dominion," by A. McNeill, Chief of the Fruit Division, Ottawa, September 2; and "Farm Forestry," by E. J. Zavitz, O. A. C., Guelph, September 6.

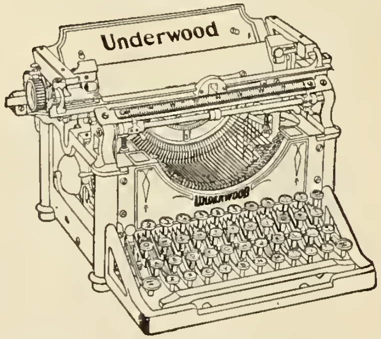
The extension of markets division, Department of Agriculture, has received information to the effect that the government of Cape Colony, South Africa, intends to enforce more strictly the existing regulations against the introduction of apples infected with the disease known as "black spot" (fusicladium dendriticum), or other fungous or insect diseases. Exporters of such fruit from Canada are warned that shipments found to be so infected will be liable to confiscation and destruction without compensation, under the provisions of the import regulations.

A close watch is being kept by the fruit inspectors of British Columbia for diseased fruit and culls coming into that province. During the last few weeks nearly 1,500 boxes of California fruit have been condemned by Inspector W. H. Lyne, of Vancouver. The California shippers do not believe in shipping subject to quarantine inspection and have united in refusing to do so. It has now been suggested that Vancouver fruit dealers unite to boycott the Yankee dealers unless the fruit is guaranteed. Mr. Lyne knows California conditions and says that there is plenty of healthy fruit to supply the needs without dealers trying to make a few cents more by selling such culls as have been sent.

The beautiful hydrangea which is pictured on the front cover of this issue is owned by Mr. S. E. Arnold, of Smith's Falls. This is a variety suited to indoor culture, known as Hydrangea Hortensis, the special name of this specimen being Otaksa Monstrosa. At the time the photo was taken there were 95 clusters. Mr. Arnold started this plant about 17 years ago from a small slip, and has given away many slips from it since then. It is kept outside during summer and allowed to become dry and lie dormant in the cellar over winter. Once every two or three years it is repotted.

An interesting case was settled at Lorne Park recently. Mr. W. C. Peer had contracted with the distributing company for all his berries at seven and a half cents, but was offered more elsewhere and decided to break the contract. An injunction was laid to prevent him selling to any other party, and he ultimately consented to abide by the contract for the remainder of the season.

Last autumn Messrs. R. B. Whyte and W. T. Macoun published a bulletin on "Bulb Culture for the Amateur," under the auspices of the Ottawa Horticultural Society. As it will soon be bulb planting time again, the authors would



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COLD STORAGE
—FOR—
APPLES

THE GOULD COLD STORAGE COY.
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1898
MONTREAL

Linde Cold Air System, Perfect Ventilation, Right Temperatures, Centrally Situated, close to the principal Dealers.

COR. GREY NUN & WILLIAM STS.
MONTREAL

O. M. GOULD,
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See Notice in Advertising Columns.

be pleased to learn through the columns of The Canadian Horticulturist from any persons who procured copies of this bulletin whether the advice given has proved satisfactory in practice, and if not, what changes are suggested in either the lists of varieties or in the methods of culture recommended. There was a large demand for this bulletin, but copies can still be obtained at 10c. each from Mr. J. F. Watson, Secretary Ottawa Horticultural Society, Ottawa.

The first Ontario apples reached Winnipeg on August 11th, on precisely the same day as they arrived last year. They were mostly Red Astrachans and of exceedingly poor quality. They were probably windfalls of neglected trees falling in grass, and did not show up well alongside of the carefully put up fruit from the United States and British Columbia.

The joint picnic of the Toronto, Hamilton and St. Catharines branches of the Ontario Vegetable Growers' Association at Hotel Brant Park on August 16 was a huge success. For one afternoon, growers with their wives and families to the number of over 2,000, forgot the hoes and the hoed crops and let enjoyment reign supreme. Handsome prizes were given for each of several events, which made up a fine programme of races, jumping, etc. Special interest was taken in the race for members of the association only, between 40 and 50 years of age, and in the one for members' wives only. Among the leading members present were Messrs. J. W. Rush, Humber Bay; Robt. Thompson, W. C. McCalla, G. B. McCalla, W. H. Bunt-

THE ——

Herbert Raspberry

From all quarters, where under trial, come good, enthusiastic reports of the Herbert Raspberry this season. It is justifying all the claims made for it, of being the Hardiest, Earliest, Most Delicious and Most Profitable Red Raspberry grown to-day. From 4 rows, 300 ft. long, were picked some 800 quarts.

Prices for fall delivery; plants, each 40c; dozen, $4; one hundred, $25. Cash with order.

To protect from unscrupulous persons, all packages will bear the Herbert Seal of this Nursery, which purchased the rights from the originator, Mr. R. B. Whyte, one of the foremost horticulturists of Canada.

WRITE FOR CIRCULAR

The Renfrew Nurseries Co.
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J. C. Rochester, Pres.
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NOW IS THE TIME

to order your Fall Supply of

FLOWER POTS, ETC.

Our stock is large and we can make prompt shipments.

THE FOSTER POTTERY CO.
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HAMILTON, ONTARIO

MARCHMENT'S

Sure Growth Compost

Supplied to all the largest nurserymen and fruit growers in Ontario. Shipments made by car or boat. Prices reasonable.

S. W. MARCHMENT,

Tel. Main 2841. **105 Victoria Street,**
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PEACHES
—AND—
GRAPES

There are hundreds of first-class substantial grocers throughout Canada who would be glad to buy peaches and grapes, and other fall fruits direct from the grower.

An advertisement in **The Canadian Grocer** will put you in touch with these buyers and will cost you very little money.

We make no charge for preparing your copy.

WRITE US FOR PARTICULARS

The Canadian Grocer
10 Front St., TORONTO

ing, St. Catharines; W. A. Emory, president of the Provincial Association; E. J. Mahoney, president of the Hamilton Association; E. D. Smith, Winona, and A. W. Peart, of Freeman.

Mr. McNeill, of the Fruit Division, Ottawa, has been interviewing the fruit dealers of the west. One dealer in Medicine Hat commented as follows: "Our trade is going almost exclusively to British Columbia. The western men grow better stuff, grade it more uniformly, use better packages, settle claims more promptly, and are in every way better business men than eastern fruit growers."

A report from Dominion Fruit Inspector Wartman, Montreal, states that the keeping quality of California Tragedy plums is something wonderful. Three specimens taken from different boxes of a car lot consigned to Glasgow via Montreal, were put in a drawer in his desk where a thermometer ranged from 70 to 80 degrees. After 10 days the plums were unwrapped from the soft paper and found to be in sound condition. These plums could easily be placed on the Glasgow market in perfect condition when the temperature during the ocean voyage is kept at 35 degrees.

Where Damage Occurs.—I believe sending unripe, uncolored, immature fruit to the old country markets does more damage to the fruit growers of this country than almost any other infraction of the act to prevent frauds in packing fruit.—(H. J. Scripture, Brighton, Ont.

Quebec Fruit Growers Meet

The summer meeting of the Pomological and Fruit Growers' Society of Quebec was held at Village de Mont St. Hilaire, August 23 and 24.

The meetings were ably presided over by Mr. Fisk, and Mr. Chapais did excellent work as interpreter. On Thursday noon Mr. A. McNeill, Chief of the Fruit Division, Ottawa, arrived, and the afternoon was given over to a general discussion and to a visit to a neighboring orchard. The various sessions were fairly well attended, especially that of Wednesday evening, when Prof. F. A. Waugh gave an interesting address on Flower Culture. The discussions were well sustained and to the point.

The programme included addresses on the following subjects: "Planting of fruit trees, care necessary to be taken. Fruit cultivation along the Gulf of St. Lawrence"—G. Reyneaud, Horticulteur, La Trappe, Que.; "Plums"—R. Brodie, Westmount, Que.; "Results following severe winter of 1903-4, and last winter upon tender varieties of fruit trees"—R. W. Shepherd, Como, Que.; "The Strawberry Leaf Rust"—J. C. Chapais, St. Denis, Que.; paper (subject not named)—N. E. Jack, Chateauguay Basin, Que.; "Notes on fruit meeting in western New York and Vergennes, Vt."—Wm. Craig, Abbotsford, Que., and "Some mistakes made in the past in the planting and after treatment of apple orchards in the province of Quebec"—Volunteers.

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S. S. Fremona, fan ventilation only, " 9th
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What the Florists Did

A pleasant and profitable time was spent by the members of the Canadian Horticultural Association at their eighth annual convention, held in Montreal August 8, 9, 10 and 11. The business of the convention was transacted during the first two days, the last two being devoted to visiting leading gardens and points of interest in and around Montreal. In his annual address the president, Mr. Geo. Robinson, of Montreal, reported that the past year had been an encouraging one for professional florists as the demand for flowers had shown an increase.

The principal papers and addresses presented included an illustrated lecture on "Park Design" by Mr. Frederick D. Todd, landscape architect, of Montreal ; an essay on "How to keep a greenhouse attractive in winter," by Mr. Thos. McHugh, of Dorval ; essay, "How to keep grounds attractive in summer," by Mr. R. Burrows, of St. Anne de Bellevue, Que., published in this issue ; a review of roses and carnations, by Mr. Wm. Gammage, of London, and an essay on violets by Mr. F. L. Girdwood, of Montreal.

Guelph was selected as the place for holding the next convention. The following officers were elected for 1906 : President, Mr. Wm. Fendley, Brampton; 1st vice-president, Mr. Wm. Hunt, O. A. C., Guelph ; 2nd vice-president, Mr. John Walsh, Montreal; treasurer, Mr. Herman Simmers, Toronto ; secretary, Mr. A. H. Ewing, Woodstock ; executive committee, Messrs. J. Suckling, Truro, N. S. ; J. Eddy, Montreal ; J. Campbell, Simcoe. It has been decided since the convention to start a new florist paper, the first copy of which will appear the first of this month.

Guelph Society Pushing Matters

This year 900 packets of aster seed were distributed by the Guelph Horticultural Society and a revised bulletin given with each packet. The children are greatly interested in the growing of these, and a love of flower culture that might have lain dormant is being brought into active life. Last spring several of our interested citizens donated shade trees, over 50 elms, oaks, maples, catalpas, etc. The society looked after the planting of them around the schools and churches and in the parks and streets. In order to prevent the havoc to the trees so often perpetrated, the society is endeavoring to look after those on public property. Our society also provided window boxes for the postoffice and city hall. The sight of large well filled boxes of green and bloom on the gray substantial stone buildings is most effective.

Monthly meetings have been very practical, usually taking the form of an informal discussion led by some member of the society. A deputation from the horticultural society waited on the members of the city council and the board of trade and asked their assistance in a campaign of civic improvement. To set the ball rolling a joint meeting under the auspices of the council, board of trade and horticultural society was held, when Mr. A. K. Goodman, Cayuga, gave an instructive address on civic

HYACINTHS ❧ TULIPS
NARCISSUS
CROCUS ❧ SNOWDROPS

OUR BULB CATALOGUE
describes the above and many other other kinds. **It tells how to plant,** when to plant, where to plant, and what to plant.

PAEONIES, HARDY PHLOX, CRIMSON RAMBLER AND HARDY HYBRID ROSES, ORNAMENTAL AND FLOWERING SHRUBS.

CATALOGUE ON APPLICATION.

J. GAMMAGE & SONS, = London, Ont.

improvement, and our president, Rev. P. C. L. Harris, exhibited about 70 stereopticon views of unimproved and improved grounds, streets, school gardens, etc. We are indebted to members of the staff of the O. A. C. for much valuable assistance and information. It is our ambition to make Guelph the prettiest and best city of them all.—(Annie Rose, Sec'y Guelph Horticultural Society.

A bigger flower show than ever is being planned for this fall by the Kingston Horticultural Society. Plans are under way for the show on a larger and more complete basis than last year. Tickets have been printed and the prize list has been revised. A number of new classes has been added to the prize list, and prizes in open classes have been made more uniform.

A Splendid Spraying Machine

The Little Giant Sprayer is a machine which has grown rapidly in public favor since its merits have become known. After giving it a fair trial many leading growers have purchased one of these machines, among them being Mr. E. D. Smith, of Winona.

Mr. Smith has sprayed over 200 acres of nursery stock this spring and summer with a Little Giant Sprayer without a break or a dollar of expense, which cannot be said of any other sprayer on the market. Ninety gallons of Bordeaux mixture will spray two and a half acres, with over 15,000 trees per acre, and he has sprayed 12 acres per day with one horse. For power, cheapness and easy running it has no equal. It is the only machine on the market that was invented with a number of nozzles on either side of the machine that will spray two rows of grapes or raspberries at a time. This can be done by driving between the rows.

For peaches, pears, plums, cherries and apple trees two lines of hose with four or six clusters of nozzles on each line will spray any tree after the machine stops. For potatoes it is possible to spray four rows at a time, and for killing mustard all the user has to do is to sit and drive. A fair trial will readily convince growers that there is nothing like it on the market. It is rapidly taking the lead of all others, due to its intrinsic merits. Some of these machines will be on exhibition at the Toronto exhibition.

New Variety of Asparagus

A new French asparagus of great merit has been introduced by Stone & Wellington, nurserymen, Toronto. A good crop was harvested up to July. Bunches have been made of 20 stalks measuring eight to nine inches in length which weighed two pounds.

Although the stalks are so large they are perfectly crisp and tender, so that it is a great acquisition in every way. A Yonge street, Toronto, dealer on seeing a bunch which was shown in his store window remarked that if he had had asparagus like it early in the season he could have sold it for $1.50 per bunch.

THE MAYNARD PLUM

The greatest plum ever introduced by that "Wizard of Horticulture,"

LUTHER BURBANK

Offered for the first time in Canada, in Canadian grown stock, by

THE FONTHILL NURSERIES

THE MAYNARD PLUM is sent out by Mr. Burbank with the assurance that it surpasses in quality and beauty of fruit any plum heretofore introduced. We bespeak for the **MAYNARD,** through the hearty co-operation of fruit-growers everywhere, such a sale as Mr. Burbank's best efforts so richly deserve and merit.

We have bought the sole right to sell the **MAYNARD PLUM** in Canada, under a contract that gives Mr. Burbank a royalty on each tree sold, and will concede that he has well earned, by his long years of toil in the origination of new fruits and flowers, all that will come to him in honor and money from the sale of this new plum.

DESCRIPTION—Size, very large, often measuring 7½ inches in circumference. Form, nearly round, slightly flattened at the ends. Color, richest crimson purple. Quality, unsurpassed in flavor and as a shipper, fruit perfectly solid when dead ripe. Tree, hardy and vigorous, bearing immense crops while very young.

Write for descriptive circular and prices. See reading notice on page 285. Agents wanted for the **MAYNARD PLUM** and other **SPECIALTIES.** Write for terms and catalogue, and send 25c for our **HANDY ALUMINUM POCKET MICROSCOPE,** just the thing for Farmers, Fruit Growers, Florists and Botanists, Teachers, Etc.

STONE & WELLINGTON, - TORONTO

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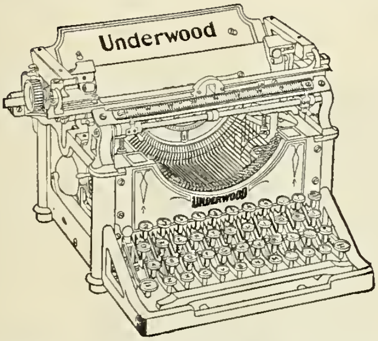

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Galt Steel Siding

Is easily applied to any building, requires no expert knowledge and gives a handsome and substantial appearance at a minimum of cost.

Is fire and lightning proof and reduces insurance rates to the lowest schedule

Made of the best grade of sheet steel, in a number of designs. Its perfection in every respect is guaranteed.

The Classik Kids will furnish catalogue and all information free if you ask them

GALT ART METAL CO., Ltd.
GALT, ONT.

The "*Safety*" Fruit Picker

does away with ladders and climbing, and ensures safety to the operator and avoids bruising of the fruit

The "Safety" Fruit Picker will save money in clearing up your trees, and is the "proper thing" for picking "Exhibition" fruit.

DESCRIPTION

The "Safety" Fruit Picker consists of a rubber covered wire hood, attached to a 12 foot pole, which grasps the fruit the same as the human hand, tilts it up and a single twist releases the fruit and drops it down the chute into a canvas bag at the waist of the operator without bruising or coming in contact with other fruit. It can be operated by a woman or child as easily as by a man.

The pole is bamboo, which insures lightness and stability, and is divided into 8 and 4 foot lengths. which are adjustable and can be used for large or small trees, at the pleasure of the operator. The wire spring, which holds the mouth of the chute in position, allows for the interference of the branches. The whole outfit weighs only 2¼ lbs.

The bag is made of canvas duck, and is attached to a steel wire frame, which conforms to contour of the body, and is strong and durable and holds half bushel of fruit; is held in position by a wide canvas strip, which goes over the shoulder with an adjustable snap to secure it, and which is easily detached to facilitate the emptying of the bag when full.

Price, complete, $2.00

The Safety Fruit Picker Co. of Ontario,
Limited.
Ridgeville, Ont.

Fall Work in a Northern Ontario Plum Orchard

The illustration shows Mr. W J. Justice of Barrie, harvesting his plum crop. There are about two and one-half acres devoted to this fruit crop and this year the return is about 1000 baskets. They include such valuable varieties as Lombard, Green Gage, Imperial Gage, Yellow Egg, Reine Claude, Pond's Seedling, Magnum Bonum and Burbank The trees are set 20 feet apart each way. Immediately under them is a row of gooseberries on each side, and between these two rows of strawberries and one of currants. The man standing to the left is Mr. Justice.

The Canadian Horticulturist

OCTOBER, 1905

VOLUME XXVIII ❖ NUMBER 10

THE SPRAYING DEMONSTRATIONS

PROF. WM. LOCHHEAD, O. A. C., GUELPH.

ALTHOUGH the results of the experiments conducted this season in the Niagara district, spraying grapes, have not been conclusive, yet the careful and impartial observer has been shown that those vines which were sprayed are freer from disease than those which were unsprayed. The main object of the experiments was to test the efficiency of the preparations which had been recommended for the control of the chief insect and fungous diseases of the vineyard and orchard, especially for the control of the grape rots and San Jose scale.

The work was begun and charted by myself, but was carried on in my absence by Mr. P. W. Hodgetts, Department of Agriculture, Toronto; Mr. T. D. Jarvis, O. A. C., Guelph, and Mr. Andrew Haynes, St. Catharines. Experiments were carried on at the following points: Mr. Murray Pettit's, Winona; Mr. Ambrose Pettit's, Grimsby; Mr. R. Kelly's, Beamsville; Mr. Bartlett's, Beamsville; Mr. J. Fretz's, Jordan; Mr. S. Overholt's, Jordan; Mr. Geo. Robertson's, St. Catharines; Industrial Home, St. Catharines; Mr. S. Shearer's, Niagara-on-the-Lake; Mr. Porter Adams', Queenston, and Mr. Berriman's, Stamford.

The first experiments began at Winona, April 13, while the trees and vines were still dormant. Applications of lime-sulphur were applied in some orchards for the control of the San Jose scale. In most cases this mixture was made without the application of steam. In the vineyards a one per cent. solution (4 pounds in a barrel of water) of copper sulphate was applied to certain check rows. Later applications of Bordeaux mixture were made in the vineyards about the second week in June, the first and third weeks in July, and the first and second weeks in August. A chart of the different experimental vineyards was carefully prepared at the outset and the plan was adhered to as nearly as possible throughout the season. The object of the chart was to determine what sprayings were absolutely essential and what sprayings were unessential for the control of the grape rots. Rows, or portions of rows, were left unsprayed as checks in every vineyard.

During September I visited the different experimental vineyards. The season has been a most favorable one for the grape grower. Even the most careless grower has had very little rot to contend with. For this very reasan the season has been an unfavorable one for experimentation. Practically no difference was noticed as to the effects of the different applications. At Winona the check vines, which were left unsprayed, had considerable mildew, but the grapes will not be injured to any extent. In a season, such as that of last year, these mildewed grapes would have been totally destroyed. The color of the foliage was much brighter on the sprayed vines than on the unsprayed. At Grimsby the Black Rot was found on the vines which had been unsprayed, and, as at Winona, it was found that practically no damage had been done by the mildew, which was quite evident on the unsprayed rows and absent from the sprayed rows.

At Beamsville the check rows were the only ones that had Black Rot to any extent, and the owner of the vineyard was one of the first to recognize the fact that the spraying had kept the Black Rot away from his vines. At Jordan the row which only had the blue stone treatment in April showed considerable mildew. There was, however, one row of Moyer grapes which had been sprayed with Bordeaux five times during the season and which showed more Black Rot than any other row. The owner states that last year the grapes on this row were completely ruined by Black Rot.

At St. Catharines the results were very similar to those observed at Grimsby and Winona, the unsprayed vines showing the most Black Rot and mildew. An interesting lesson by way of comparison may be drawn from a study of a neighboring vineyard which had never been sprayed. Although this is a very favorable season for grapes, yet this grapery showed a great deal of Bird's Eye Rot, Mildew, and Black Rot.

PETRIFIED GRAPES.

At Niagara-on-the-Lake, Mr. Jarvis reports, the sprayed vines were very clean, but the unsprayed vines showed considerable Black Rot and Bird's Eye. At Stamford, Mr. Jarvis also reports, there was practically little difference between the sprayed and unsprayed vines—both being very free from disease. At Queenston a splendid object lesson was observed in a vineyard of Niagaras. On the check (unsprayed) vines "petrified" grapes and Downy Mildew were in evidence, but were entirely absent from the sprayed vines. The owner states that the Delawares which were sprayed were much better and cleaner than those which had been left unsprayed.

A very interesting side experiment was carried out in a vineyard along the Niagara river road. Only a portion of this vineyard was sprayed, but the grapes on the unsprayed portion were shelling very badly, and many of them were "petrified." Downy Mildew was very abundant in the unsprayed portion, and there seems to be no doubt that the "petrified" grape is due to the attack of that disease. The sprayed part of this vineyard had but one application, in July, but even with but a single application the difference between the sprayed and unsprayed vines was very evident.

In most of the orchards considerable injury was done by the Grape Berry Moth. Should this insect continue to trouble us for another season, it may be necessary to add some arsenic solution to the Bordeaux, especially during the June and July sprayings.

On account of the unsatisfactory condition of the season for spraying experiments the Government will be urged to conduct the same series of experiments in the same vineyards for another season at least. Grape growing is a very large industry in the Niagara region, and it is very important that the grape grower should have definite information as to the best ways of controlling diseases on the grape in the most unfavorable seasons.

The power sprayer possesses the following advantages: 1st, the same number of men will cover two to three times the tree surface; 2nd, only about one-half the quantity of spraying mixture is needed; 3rd, the work is much better and more effectively done.—(W. H. Brand, Vinemount, Ont.

It will not do to over-estimate the results of spraying, but I am satisfied that, with one or two exceptions, the growers about Ingersoll, in whose orchards we used the government power sprayer, were well pleased with the results.—(J. C. Harris, Ingersoll, Ont.

HOW FRUIT SHOULD BE PACKED

THAT Ontario fruit growers are anxious to learn the best systems of packing fruit in boxes was evidenced at the Canadian National Exhibition by the interested crowd of fruit growers present at the packing demonstrations given in the dairy building by Mr. B. T. Boies, an expert packer from Coldstream Ranch, Vernon, B. C. The growers were not satisfied to merely watch the work, but persisted in asking questions. These were answered by Mr. A. McNeill, chief of the fruit division, Ottawa, or by Mr. P. J. Carey, Dominion Fruit Inspector, Toronto.

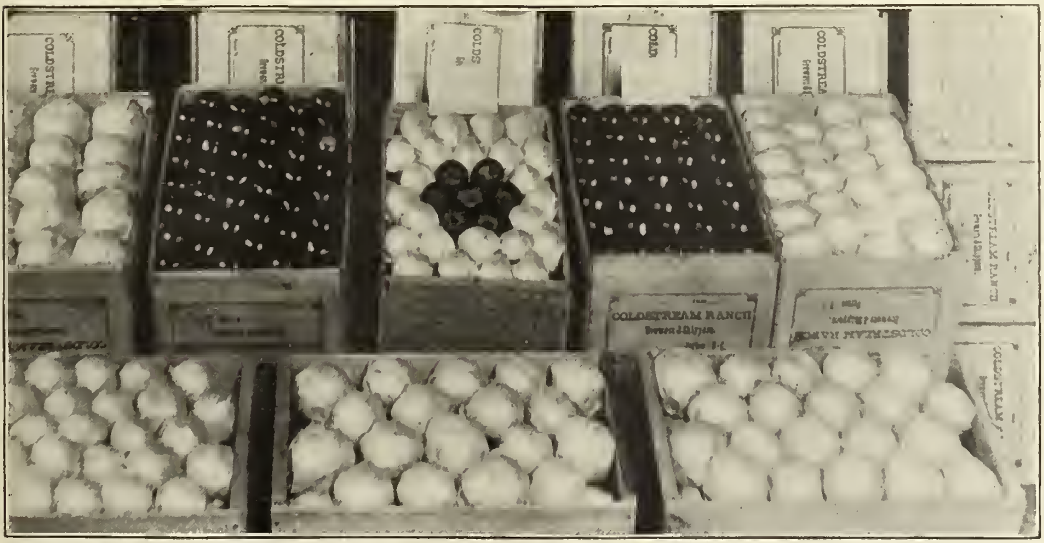
Mr. Boies showed that he had mastered the art of packing by the neatness and dispatch with which he handled the uneven samples that he was compelled to use. By placing in rows of two, three, four, five, etc., according to size, and the fruit on edge or on end, there are a total of about 60 different arrangements. The main point is to select that arrangement which will fill the box sufficiently full for putting on the cover and leave no slack.

Mr. McNeill was asked if he would recommend making large shipments in boxes. He replied he would not unless he had large quantities of first-class fruit. In British Columbia the growers use nothing but boxes and find their use pays. They should, he thought, also pay in Ontario. The British people are accustomed to our apples reaching them in barrels, and as they are slow to change they would look on our boxed apples with suspicion. The result at first would be they would not sell. It will take a few seasons to make Canadian boxed fruit popular on the British market.

In reply to a question regarding the use of foreign materials to face the box, Mr. McNeill explained that British Columbia packers use nothing between the face and the apple, but he said that it might be advisable to use pulp paper. Excelsior is condemned all along the Pacific slope.

THE BOXES ON EXHIBITION.

The boxes which had been in competition in the fruit building were criticized. Some packers had not used boxes of standard size. Others used paper fillers to avoid spaces. If the fruit did not come to the top of the box several folds of newspaper were put in instead. Other exhibitors made



How Fruit Is Packed in British Columbia—Note the Different Arrangements of the Rows

their boxes secure by means of steel bands and screw-nails. These practices cannot be allowed. They will not do in commercial packing. No matter how good the fruit, these defects would warrant the judges in throwing the entry out. Not a single packer had used the proper nails. The best nail is a round, corrugated wire nail roughened so that it holds in the wood. The next best thing is an ordinary nail resined or put in salt so that it will rust. Tight boxes are not wanted. The lids should never be nailed along the edges. Proper nailing at the ends and cleating is sufficient. If nailed along the edges ventilation is hindered and the fruit heats unless continually in cold storage, and the value of elasticity in the sides is removed. There should always be a bilge, and as the apples evaporate the spring due to this bilge goes in to take up the resulting slack. The cleats are essential because when stored the weight of contiguous packages should come on the cleats and not on the bilge. Dovetailed boxes are not wanted, as they are liable to burst open after being used a short time or if stored in a moist place. White spruce, free from knots, makes the best box. These can be made light and yet be strong, and spruce holds the nails well.

Some one wanted to know the quality of paper used in wrapping fruit. "The paper generally used," said Mr. McNeill, "is the regular duplex packing paper. It is calendered on one side and slightly thicker than ordinary paper. Any grained tough paper will answer the purpose."

An anxious grower remarked that there was no use packing apples in boxes when the Government will not take steps to secure the proper shipment of the fruit. Mr. Carey admitted that conditions were not the best, but claimed they were as good as they had been and growers had shipped with success for years.

"Orchardists object that the individual grower cannot ship his fruit," said Mr. McNeill, "but it is difficult to ship small lots of any commodity. Farmers should club together and ship in carloads.

"Cooperative packing establishments have been a success in several localities. Associations are incorporated for the trifling fee of 50 cents. The Government has lent aid by sending men to lecture on the advantages of these associations." The good work being done by the St. Catharines Packing and Forwarding Co. was mentioned to show what could be done in this line.

In reply to a question as to whether it would pay to use the California package for plums, Mr. McNeill said that it was not advisable for the local market, but that if we are to gain a place on the western markets that style of packing must be adopted.

Mr. Boies has been engaged by the Dominion Government to give demonstrations throughout the fruit districts. From Toronto he went to the Niagara district, and from there he goes east to Nova Scotia.

A TALK WITH MR. BOIES.

In an interview with The Horticulturist Mr. Boies said: "Growers in British Columbia have made a success of packing in boxes. Why cannot Ontario growers? In the west selling is done according to weight. A box of pears or apples is 40 pounds. Peaches, plums and grapes are put up in basket-crates, four square baskets to the crate, making about 20 pounds altogether. Many styles have been tested and these suit best.

There is a uniform standard along the coast from Mexico to British Columbia. In British Columbia the fruit inspectors will reject all fruit which is not in a standard package. One of the drawbacks in Ontario fruit conditions is the lack of a standard. Packages are allowed to come across the line in any package from a bushel to a small hand basket. The result is the home grower does not know what he has to compete with.

" Growers in the west have no San Jose scale or codling moth to fight. These pests have been watched for since fruit growing began, and all diseased fruit or trees brought into the country is burned. In this way these fruit destroyers never get a hold in British Columbia.

NOT SUCH SLOW WORK.

" Ontario orchardists say that it takes too much time to pack their fruit in boxes. In the west an expert packer averages 70 to 100 boxes per day. He is paid at the rate of two cents per box. Since coming to Ontario I have packed a standard box and had it nailed ready for shipment in seven minutes.

" On the Lord Aberdeen estate at Vernon. B. C., about 40,000 cases of apples are handled in the fall. Pears and plums are handled in the same way but wrapped in paper for protection. To have this fruit keep well it must be picked at the proper stage of maturity and then handled with care. Along the pacific coast a barrel of fruit is unknown.

" Ontario fruit can be handled in the same way just as successfully if proper care is taken. Early fruits especially could be handled in boxes to great advantage. Since the varieties are tenderer special care must necessarily be taken. Wealthy apples are shipped from British Columbia to Dawson City, and although they have to be transferred four times they invariably arrive in A1 condition. The same fruit has been sent to Hong Kong and Sidney with similar results.

" Uniform fruit is the essential to speedy packing, and by putting only uniform fruit in a package the retail trade has something it can depend on. Over half of this grading for size is done when the fruit is small. The fruit is thinned on the trees, leaving each fruit equal chance for development. No patent graders are used after the crop is harvested. Each packer learns by experience to take only fruit of uniform size. The eye readily becomes trained. There are many ways of packing, but the main point is to have the exact package or a full box."

THE SPREAD OF THE SCALE

J. FRED SMITH, GLANFORD, SAN JOSE SCALE INSPECTOR.

IT is impossible to tell just how far the San Jose scale has spread in Ontario during the past year, as in some localities, such as those where very little treating was done, it has spread more than in others. In the county of Wentworth, where some scale has been found, I cannot see that the scale has spread to any appreciable extent during the past year.

This is due to the spraying which has been done by those who have the scale. East of the city of Hamilton, in the county of Wentworth, I do not know of a man who has the scale who did not treat his trees. The local inspectors see that this is done, and also watch to see how thoroughly the remedies have been applied. In the county of Halton, where there is a small infested district, the work has been done well until this year, when no treating was done. The people thought that they had the scale so well in check that they could afford to miss one year. This is a mistake, for what little scale there is left (and I found some when making an examination last spring) will multiply and become more firmly established.

In the Niagara end of the peninsula the spread has been more rapid owing to the indifference of some of those who have the scale. There are no local inspectors and it is left to each individual to spray or not to spray as the spirit moves him.

HAS SPREAD IN KENT.

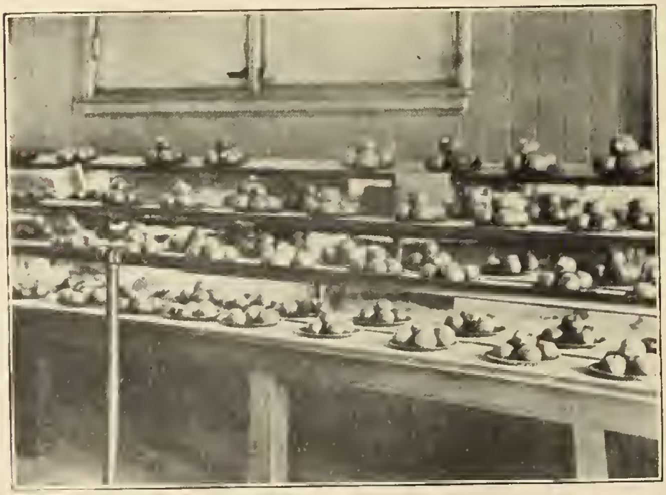
In the county of Kent the spread has been by far the greatest, as it is the exception to find a man who sprays. There is one section of this wonderfully fertile county where the work is done systematically. This is near the city of Chatham, where they have a regular cooperative association and where the spraying is all done by one gang of men who spray not only for scale but continue spraying for fungous diseases as well. I may say, also, that the packing and shipping of the fruit is all superintended by one man, Mr. W. D. A. Ross, and a more thoroughly efficient and practical man it would be hard to find.

In the scale centre of the county of Essex fairly good work has been done until the present year, when owing to the destruction of a large number of trees by the severe winters the people have become discouraged and I fear very little effort has been made to check the spread of the scale.

THE FRUIT INDUSTRY OF THE DOMINION

A. M'NEILL, CHIEF OF THE FRUIT DIVISION, OTTAWA.

A GENERAL survey of the fruit interests of the Dominion was given at the Canada National Exhibition by Mr. A. McNeill, Chief of the Dominion Fruit Division. The trade, Mr. McNeill said, is in a healthy, perfectly normal, but nevertheless critical condition. Each province has problems of its own. From Prince Edward Island on the east to Vancouver on the west there is a range of climate and soil that gives a great variety of fruits, including the tenderest apricot at one extreme and the crispy apple at the other.



Shelves Containing Harry Dempsey's Forty Varieties of Apples

There is this common experience that production has outgrown the consumption of local markets. Fruit growers, everywhere, are reaching out for the distant market. Many, however, do not realize the necessity of making material changes in their business to conform to the new conditions. It is a common practice to take the surplus that the local market will not absorb and send it to the distant market with very indifferent success. The fruit arrives in bad condition. Small prices and dissatisfaction is the result. The growers blame the transportation companies and the commission men, who do not fail to retaliate in kind.

As a matter of fact the problem is a new one. Reform must be in the work of all three. The varieties that are most excellent for the one market are not always suitable for the other; transportation facilities good enough for

St. Catharines Horticultural Society's Fruit Display at the Canadian National

a short haul would not do for the long haul; and the commission men would be more than human if they did not occasionally take advantage of the man whose property they controlled absolutely, but who cannot examine the truth of their alleged facts nor make any audit of their books.

The problem resolves itself into four main factors: 1, getting better shipping facilities; 2, producing one or few varieties; 3, securing cheaper freight rates, better cars and quicker dispatch, and 4, instituting a better system of selling.

In speaking of better varieties Mr. McNeill pointed out that private growers could not be expected to produce and introduce new varieties. It was peculiarly the work of the departments of agriculture, dominion and provincial, to undertake this development. The appropriations for this work would not be in the interests of the fruit growers alone. They would benefit less, probably, than any other class. The merchants and mechanics in the distant cities, in getting more and better fruit, would in the greatest degree be affected by the improvements.

Grading, packing and packages are questions with which the fruit growers can deal directly. Speaking particularly for Ontario and the Northwest, he expressed the opinion that these questions were fundamental. Having these in view the Canadian Department of Agriculture had secured the services of Mr. B. T. Boies from Coldstream ranch in British Columbia, an expert in grading and packing, with long experience in California and Oregon. Mr. Boies is showing eastern packers that proper packages and packing costs only a slight advance at initial points, and prices obtained have shown that this improvement is appreciated at the selling end.

As to the methods of selling, Mr. McNeill looked forward to the time when the shipping of fruit on consignment would be a thing of the past. The establishment of large fruit farms and cooperative methods among small growers would lead to direct sales where the buyer and seller would meet on equal terms to do business.

PICKLES—HOW TO MAKE THEM

R. BLANCHE MADDOCK, GUELPH, ONT.

"ARE pickles good for one?" is a question frequently asked. The reply cannot be given in Yes or No. It is something like the "pie" question—harmless if properly made and sparingly used, but generally used to excess.

Vinegar, if used sparingly in salads and pickles, has an exciting effect on the digestive organs, causing the digestive juices to flow more freely, thus aiding digestion. However, if many pickles containing vinegar, mustard and such condiments are used the digestive organs are retarded. thus preventing the digestion of other foods.

CUCUMBER PICKLES.

The most common pickle is the green cucumber, and perhaps no other vegetable or fruit is so often spoiled in the pickling. I have seen cucumbers of all sizes gathered and put into a salt brine for several weeks. They were taken out and put in jars and hot vinegar and spices poured over them. These pickles, when served, have a color resembling sauer kraut in a stage of final collapse and are about as pleasing to the palate as olives to the untrained taste.

In making cucumber pickles that will retain their green color and give a crisp, dainty flavor, the best brine is made from one gallon of water to one and a half cups of salt. Only small or medium sized cucumbers should be used and left in the brine three or four days or longer if necessary. While in the brine cover them with a flannel cloth that has been rung out of boiling water. This collects any scum that may gather and also prevents mould. Before pickling take the cucumbers out of the brine and place in cold water for 24 hours. Then put in a clean white cloth to drain over night. Wipe and put them in the preserving kettle (not brass) with vinegar, spices, red pepper and sugar. Tie up cloves and small spices in cheesecloth. Add the red pepper and one cup of sugar to three quarts of vinegar. Cook slowly for two hours. Small onions may be done with cucumbers if desired.

MUSTARD PICKLE.

An excellent mustard pickle may be made as follows: Take one quart of small white onions, one quart green tomatoes, one quart green cucumbers, three green peppers, one head of cauliflower and three heads of celery cut fine. Cut the cauliflower, tomatoes (and cucumbers if necessary) in fairly small pieces and add a dressing made of the following. One-half cup flour, one-half cup mustard, one-half ounce mace in water. To this add one cup sugar, one-half ounce butter, and one and a half quarts of vinegar. Cook all together, stirring gently, till boiled. Then pour this over the vegetables and let stand at simmering point one hour before bottling.

GREEN TOMATO PICKLES.

Slice one peck of green tomatoes, six green peppers and four onions, strew a cup of salt over, and let stand over night. In the morning pour the water off and put in a kettle with a tablespoonful of ground cloves and the same of allspice and cinnamon tied in cheesecloth. Cover with vinegar and boil until soft, after which they may be bottled.

Chowchow can be made by taking one-half peck of green tomatoes cut fine, one-half peck of small onions, parboiled; one-half peck small cucumbers, nine or 10 sweet peppers cut fine, one head of cabbage cut fine, one head of cauliflower (parboiled), one-half cup of salt, a large tablespoonful of turmeric, half pound of ground mustard, one pound of sugar, one-half teacupful of cornstarch, and vinegar to cover. This should be put over a fire and let come to a boil. After standing for one hour on the back of the stove it can be bottled.

Ripe tomato sauce is made from one-half peck ripe tomatoes, four onions, one-half head cabbage, six tart apples, one-half pound raisins, three-quarters of a cup of brown sugar, four tablespoonfuls of salt, three of ground cloves, two of allspice and one quart of vinegar. Chop tomatoes, onions and cabbage separately, and let them stand over night. In the morning drain off the liquor and mix with the other ingredients. Boil slowly for one-half hour or until the tomatoes and cabbage are soft.

TOMATOES ALL WINTER.

While tomatoes, both green and ripe, may be used in making pickles and sauces innumerable, everyone prefers them sliced and served raw. With care they can be kept fresh and whole all winter. Select only medium sized, round ripe tomatoes. Cut off the green stem carefully in order to leave the top of the tomato sealed. Care should also be taken that the skin is not broken or bruised. Take a large stone crock, with smooth unchipped lining, and half fill it loosely with the tomatoes. Then add water that has been boiled and cooled. Lastly ring a flannel cloth out of boiling water and spread over the top of the crock. In a short time a scum will rise and gather on the cloth. This should not be removed unless it gets very thick, as a slight scum on the cloth collects any germs that may settle and prevents them from injuring the tomatoes.

PICKLED FRUITS.

Peaches and pears are excellent when pickled. Select small but nicely matured fruit. After peeling put one or two cloves in each pear or peach and drop them into hot vinegar in which sugar has been dissolved (one cup of sugar to one and a half cups of vinegar. Tie up cloves and cinnamon in cheesecloth and allow all to cook until fruit is tender (about 15 minutes). They should be bottled while hot. Talman Sweet apples make a delicious pickle done the same way. The apples should be cut in quarters and cooked until bright yellow. They should also be dipped out immediately, because if allowed to stand in the vinegar they become dark.

MAKE USE OF THE CULLS.

Some use should be made of the cull fruit that is allowed to waste year after year. Small peaches, pears and apples may be gathered up, wasned and put into the preserving kettle, stones, skins and all. Put on sufficient water to stew without burning. When soft put through a cullender and return to a slow fire with sufficient sugar to sweeten. If allowed to simmer slowly for one-half hour this makes a delicious marmalade for pies or cakes.

In cities large quantities of so-called jam is sold every year, made in most cases of one-half fruit and one-half turnips, carrots, and other vegetables. Girls on the farm might make a good deal of pocket money by gathering the waste fruit, making it into marmalade and selling it at the stores.

Wintering Canna Roots

WM. HUNT, O. A. C., GUELPH.

When should canna roots be taken up and where should they be kept until spring ?—(J. W., Kincardine.

After the foliage of cannas has been blackened by frost, and before the roots are touched, they should be dug with a small quantity of earth adhering to them and placed under the veranda or in a shed or out-house safe from frost, and allowed to remain for about a week or two or perhaps more, being careful not to allow them to be touched by frost.

Remove the roots before severe frosts to a rather dry warm place in the cellar and keep them in a temperature never lower than 45 degrees, and not higher than 70 degrees. Canna roots will not winter successfully in a cold, wet cellar, but be careful to avoid the opposite extreme of a very hot dry position near the furnace, as this is equally as injurious to them as a cold wet position. If the cellar is of necessity very hot from furnace heat, pack the roots in dry sand or earth and keep them in the coolest part. Florists usually winter canna roots under the greenhouse benches.

THE HAMILTON HORTICULTURAL EXHIBITION

THE fruit, flower and vegetable exhibition held in the Thistle Rinks, Hamilton, on September 12-14, was a complete success in that it created an increased interest in general horticulture. Owing to its being a very busy season with the fruit growers and to the fact that the fruit and vegetable growers of the Niagara District did not seem to fully understand the objects of the show, the exhibits of fruits and vegetables were not as large as might otherwise have been the case, but were very creditable nevertheless.

On Wednesday the school children of the city were given a half holiday and over 1,700 of them attended the show. A most successful excursion to the show was run by the enterprising St. Catharines Horticultural Society. These features added greatly to the success of the exhibition.

The prime object of the promoters was to aid the fruit, vegetable and amateur flower growers of the Niagara district, and in this they were most successful. The opinion of Mr. Roderick Cameron, of the Queen Victoria Park, Niagara Falls, is that the display of flowers in several ways eclipsed anything before held in Ontario. "It is a very creditable show," said Mr. Cameron, "and of special value to the amateur."

The rink in which the flowers were shown growers. A special feature of the work done by the Hamilton Horticultural Society was shown in the great display of window boxes and hanging baskets. The window presented a most pleasing appearance. The cut flowers, especially the gladioli and asters, were excellent. Encouragement had been given to the growing of every variety. Prizes were offered principally to amateur boxes, over 20 in number, added much to the appearance of the building with their profusion of foliage and flowers.

The display of commercial plants, including not less than 100 square feet area, deserves special mention. There were four entries, and the judges remarked that for real value they surpassed anything ever on exhibition at Toronto. The special features of the one which got the red ticket were the elegant group of palms of different varieties of which the centre-piece was composed, the Cocos Weddelliana palm, which is one of the most graceful for table decoration, and the elegant ferns. A little more color on this group would have made it nearly perfect. In the table which won second prize, the Araucaria excelsa, was the best in the show, and the color effect was good, but the centre-piece Ficus elastica, was rather tall and ragged. The centre-pieces were the weak points of the other two entries.

A fine sample of the work done by horticultural enthusiasts in Hamilton was seen in an excellent display of native ferns by Dr. Storms. The doctor had a collection of 33 varieties of ferns native to Canada, each carefully numbered and the names typewritten so that everyone could get the correct name. Some of the varieties, such as Asplenium augustifolium, Aspidium Goldieanum, Polypodium sculari and three specimens of the royal ferns are very rare. As a further encouragement to fern growing Dr. Storms purposes offering a special prize next year for a collection of ferns.

The pendulous fuchsia, the variegated leaved begonia, the scarlet Salvia, the twining English ivy and many specimens, such as the Rubber plant, Dracena, Oleander and palm, plainly demonstrated the place of the amateur at the show.

It is claimed by Mr. Cameron that Canada is sadly lacking in evergreen shrubs and plants to decorate her landscape in winter and afford shelter and protection to our numerous birds, which are forced to go south when cold weather comes. To show what can be done to change this state of af-

A Portion of the Cut Flower Exhibit

fairs he had on exhibition over 100 varieties of evergreen plants which withstand Jack Frost's attacks at Niagara Falls.

PRIZE WINNERS.

Prizes were awarded to such well known amateurs as Wm. Colvin, J. Sweetlove, J. O. McCulloch, Dr. Storms, L. C. Hildebrand, A. O'Heir, A. Alexander and numerous other flower lovers of the city. For window boxes Mr. W. Newberry won first, A. O'Heir second, and J. Sweetlove third. Miss Elsie McCulloch won the red ticket for bouquet of garden flowers, Mrs. A. G. Pettit secured second and Mrs. Wm. Cox third.

In professional or commercial plants or flowers the prizes were divided among The Webster Floral Co., Walter Holt, Sones Bros., E. G. Brown, Chas. Mason and H. P. VanWagner, of Hamilton, and P. Murray, of Niagara Falls. The Webster Floral Co. won the silver trophy which was given to the professional making the best display in the commercial class. The Steele, Briggs Seed Co. had a fine display of bulbs, seeds, flower fertilizers and sundry lines handled by that firm, while the Foster Pottery Co. had a show of their well known flower pots.

The show of vegetables was conspicuous on account of its absence. Many growers who had made entries claimed that the wet weather of Monday previous to the show prevented them from collecting the vegetables, while others decided not to enter the competition because they did not expect the show was going to be in their line. The specimens of vegetables shown were good, and it is to be hoped that next year will find the vegetable department full. The prizes went to F. Sinnet, J. Tregunno, M. E. Burton, D. A. Hyslop, A. Davis and G. E. Horning.

IN THE FRUIT BUILDING.

The condition of Ontario's fruit crop for 1905 was plainly shown by the exhibit on the benches. Apples were of fair size but very much lacking in color. Peaches, though a good crop, were very scarce, probably because they are late in ripening, and only a few varieties were sufficiently mature for exhibition purposes. Pears and plums were perhaps the best, although there was also a fine display of grapes.

The most creditable as well as the most instructive feature was the display of fruits from the Experiment Stations of the Niagara district. Too much praise cannot be given the Ontario Department of Agriculture for sending this exhibit, nor to Mr. L. Woolverton, of Grimsby, superintendent of the Experiment Stations, for the tasty arrangement of the different fruits. Six tables were filled with the exhibit and everything was carefully labelled. Placards such as "These varieties of Japanese plums were originated by Luther Burbank, the wizard of horticulture. They are wonderfully productive, but not equal to the European plums in quality"; "First-class commercial pears for home market—Giffard, Clapp's Favorite, Bartlett, Boussack, Anjou"; "The best dessert apples to cover the season are Sweet Bough, Chenango, Fameuse, Louise, Swazie and Spitzenburg," and "The King, Spy, Greening, Baldwin and Russet apples are the leading commercial varieties," were placed here and there on the tables, and Mr. Woolverton was there all the time to answer questions.

The chief object in arranging this exhibit was to give information regarding desirable and undesirable varieties. This point was well brought out with grapes. One large table was filled with varieties from Mr. M. Pettit's experimental plots, which are not recommended. This could be made a very valuable feature if the same were done with all the fruits and a display similar to the one at Hamilton made at all the leading fairs. There are about 150 varieties of grapes grown in Ontario, and from these the secretary recommends Lady, Green Mountain, Niagara and Diamond for white; Moore's Early, Worden, Concord and Wilder for black, and Lindley, Delaware, Brighton and Agawam for red. These 12 cover the season and are excellent varieties. For the home garden Moyer (red), Early Ohio (black) and Green Mountain (white) are recommended.

From the Burlington station Mr. A. W. Peart sent a mixed collection of currants beautifully put up in formalin. The branches with the fruit attached had been preserved. Besides these there were some good pears and apples from that station.

Three large tables were covered by fruit from Mr. Woolverton's plots at Grimsby. Many bottles were filled with the different fruits nicely preserved in salicylic acid. Japanese plums were a feature on one of these tables. The secretary informed The Horticulturist that these plums are much inferior to the European varieties and are never likely to take their place for domestic uses. Golden Prolific and Hale are recommended as the best, while Red June and Abundance are good but not yet ripe enough for exhibition purposes.

Another interesting and instructive exhibit was that of insect and fungous diseases. This display was also due to the action of the Department of Agriculture and was in charge of T. D. Jarvis, B.S.A., of the Entomological and Zoological Department of the college. Specimens of fruit from trees infested with San Jose scale had been collected from trees which have been sprayed and from unsprayed trees. Although these samples had not been selected to show the best fruit from sprayed or the worst from unsprayed trees, the benefit of spraying was clearly demonstrated.

Specimens of plums, peaches, cherries and grapes affected with rot, pear scab and grape mildew were in this collection. Small vials containing the different spraying mixtures and the formula for making each, weeds and weed seeds and infested branches, leaves or fruit, showing the effect of insect or fungous attacks made up the balance of this exhibit. Large magnifying glasses were supplied, and under these specimens of the scale and fungous diseases were examined by those interested.

The Women's Institutes had a booth, and anxious housekeepers received many valuable hints on the methods of canning and preserving from Misses Smith and Shuttleworth.

A display of jams by E. D. Smith, of Winona, added much to the appearance of the building, and many went on their way rejoicing with a small jar of this excellent brand of jam. The famous "Little Giant Sprayer" was the only sprayer present.

As the gate receipts were nicely ahead of the estimate the management feels well pleased with the success of their venture.

SUCCESS WITH APRICOTS

THE apricot is generally supposed to be much less hardy than the plum. There are, however, some varieties which thrive wherever plums do if clean cultivation is given during the early summer and protection by means of cover crop or mulch during winter. A member of the staff of The Horticulturist saw two fine trees well laden with fruit in the garden of Mr. John Ewing, of Rosemont, last August.

The garden in which they stand is almost level, but immediately to the north the land slopes to north and west. Protection is given on that side by two rows of walnut trees with a row of Russian mulberries between.

" I procured the trees from a Canadian nursery firm over 12 years ago," remarked Mr. Ewing. " They were set where they now stand as early in the spring as the ground was fit to receive them. Both have done well and I get a good crop every second year. The greatest trouble is keeping them from blooming too early. To retard the bloom I put a heavy mulch of sawdust around the trees after the frost is in the ground. In this way I can delay the blossoms 10 days and sometimes longer.

"The soil is a nice clay loam and is always kept cultivated. They bear as heavily as plum trees of the same size, and the fruit makes excellent preserves. The fruit ripens about August 15, or slightly before the plum crop comes in."

Cut Out Old Canes

" WHEN the crop of raspberries is harvested," said Mr. J. A. Pettit, of Grimsby, to a representative of The Canadian Horticulturist recently, " I go through the patch and cut out all the old canes and leave them lying on the ground between the rows until the following spring. They hold the snow and thus are a protection during winter. When the snow is gone I trim off the tops of what canes were left to about three feet high, and all rubbish is removed and burned."

" As soon as the raspberries are done," says Mr. J. M. Metcalf, of Grimsby, " I go through the patch with a spade and take out all old and diseased canes. These are burned so that the diseases will not have a chance to spread. My patch has been running about 16 years and gives fruit of as good quality as it did the second season."

The method adopted by Mr. A. W. Peart, the well known fruit grower of Burlington, is to prune out all old wood and superfluous young wood as soon as possible after the fruit has been harvested. " The sooner it is done the better," said Mr. Peart, " because the strength which goes to the superfluous young wood should be going to the bearing wood of next year. It is not wise to leave the canes which are cut out on the ground because they harbor mice and fungous diseases. They should be burned immediately."

Buying New Raspberry Plants

" WHEN getting in a new variety of raspberries from a distance," says Mr. J. A. Pettit, of Grimsby, " it pays best to get only enough to plant a few rows. Then the young suckers can be taken from these the following spring, when just coming up, and the remainder of the patch set out. This can be done with success if the young plants have not to be transferred too far."

Columbia raspberries yield more to the acre than the Cuthbert, but they are not so good for table use.—(W. A. Best, Picton,

We are apt to form our opinions of the people whose homes we pass on our way to and from business by the neat appearance or otherwise of their home environments.—(P. G. Keyes, Ottawa, Ont.

BULB POTTING AND PLANTING

WM. HUNT, O. A. C., GUELPH, ONT.

TO secure early flowers from winter and spring flowering bulbs, the bulbs should be potted early in the autumn. A few of the early flowering Roman Hyacinths should be potted. There are several colors of these easily grown. The white variety is the best.

Three bulbs can be put in a four or five-inch pot. No drainage, excepting the hole in the bottom of the flower pot, is necessary. When grown properly, these and all similar kinds of bulbs require all the room in the pot for roots, without putting in cinders, etc., for drainage. Dutch Hyacinth bulbs should be put one in a four or five-inch pot. These can be had in a variety of colors, single or double.

Almost all varieties of the Narcissus family succeed well when grown in pots for the window. The Paper White is about the earliest flowering and is easily grown. The rather rank odor of its flowers are, however, objectionable to some people. The following varieties will be found to be good for growing in pots: Poeticus, Poeticus ornata, Von Sion (true Daffodil), Golden Spur, Horsfieldii, Emperor, Bicolor, not forgetting a few of the sweet-scented Jonquils. Two or three bulbs of Narcissi can be planted in a four or five-inch pot.

Tulips, Crocus, and Snowdrops will not give as satisfactory results in pots as those just mentioned. They are better for planting out of doors in beds or borders.

In potting bulbs use fairly rich loamy soil. Press the soil firmly around the bulbs, leaving the surface about half an inch below the top of the pot. Water them so that all the soil is well moistened. Then stand the pots where they can be covered with two or three inches of coal ashes, sand, or light garden soil until the bulbs are well rooted. About five or six weeks in this condition is usually sufficient to enable them to secure good roots. Securing good roots to the bulbs, before they are brought out into the light, or before they make much top growth, is the great point to be gained in the pot culture of bulbs.

A good place to bury the pots is in the garden where they can be protected with leaves if severe frosts set in, or the pots can be put in a cellar or root house and covered up as directed. The pots can—after the bulbs are rooted—be placed in the window at intervals of a week or two to ensure a succession of flowers.

Bulbs of the kinds mentioned may be potted as late as December or even later, but the earlier potted bulbs usually give the best results, as the bulbs lose vitality to a certain extent when kept dry too late in the winter.

A GENUINE HORTICULTURIST

RODERICK CAMERON, NIAGARA FALLS SOUTH, ONT.

RECENTLY I enjoyed spending a few hours at the residence of Mr. James Goldie, in Guelph, and was much impressed with all I saw and heard. Mr. Goldie and his guid wife seemed to possess the secret of youth and of happiness, which secret I felt was in some mysterious way connected with their daily study of horticulture. Truly they live very near to nature's heart. With the hope that the readers of The Horticulturist may get a glimpse of what so delighted me and perchance an inkling of their secret, I venture a short report.

Mr. James Goldie, of the People's Mills, of Goldie & Sons, Guelph, is a name familiar to most Canadians. As a man of business he has been eminently successful. In early life Mr. Goldie, who is now 83 years

A Corner in Mr. Goldie's Garden

old, and who has retired from active business, took up the study of gardening, which he thoroughly mastered because it was to him a labor of love. After entering on a business career he still devoted much time to his favorite study, until to-day he is not only one of the most ardent advocates of floriculture in the Dominion, but he is also one of the most enthusiastic botanists.

The artistic manner in which the grounds around his fine residence are laid out with the choicest of trees, shrubs and flowering plants bespeaks his knowledge, his culture, and his refinement. They seem truly the visible expression of his inner self. To see these choice and valuable plants in such a variety and in such abundance surprised and delighted me.

Notable among these plants were to be seen the Gentian Acaulis, an old inhabitant of British gardens, but in this country very rare. It grows six inches high, producing tubular blue flowers, and is one of the most beautiful of hardy perennials. There was, also, the best collection of Primulas I have seen in Ontario, and in many species and varieties. The Violas or tufted pansies are the finest in the Dominion. His varieties of perennials are legion. Nor have the orchids been overlooked. They can be seen in large clumps in select spots in the garden. The lily family, too, have a place, and the Retinospora plumosa, R. plumosa aurea, R. obtusa and many other varieties of evergreens also seem to be at home.

The ferns are great favorites with Mr. Goldie. Among his collection may be seen a large number of the rare fern, Aspidium Goldieanum, one of the most beautiful native ferns we have. This fern was discovered and named after John Goldie, Mr. James Goldie's father, who, being a great botanist, was sent out to Canada by the British government before the time of trunk railroads, on a botanical expedition. At that time Mr. Goldie had to foot it from Montreal to Albany.

From his father Mr. Goldie has inherited his love for the beautiful, and this heritage he would perpetuate to all within his reach for Mr. Goldie is not content to live to himself alone in his garden of the beautiful, but is ever active in trying to promote more love for floriculture. He has probably imported and exported at his own expense more plants and seeds than any other private individual in the province. Mr. Goldie is a public benefactor in the strongest sense of the term, though perhaps because of his quiet method of working there is no other public benefactor who is receiving less cognizance for his achievements.

Mr. Goldie holds the view that horticulture is ever the forerunner of all other successful cultivations, hence his zealous desire to promote the love for flowers. The gardener's position he would elevate; the ideal gardener has to him as large an outlook and as broad a field as that of the so-called learned professions. The pruning knife in the hands of his ideal gardener can be handled he maintains with as much love and dignity as can the knife of the surgeon.

Mr. Goldie's love for the beautiful, though confined in early life mostly to the flowers, has broadened with his years. Birds and animals now have a share in his affections. The fine arts, too, have a place. Inside his home may be seen many beautiful and costly paintings, statuary and cases of stuffed birds, while outside pans of water and food stand here and there. The birds, the beautiful and now rare wood duck, the English, the Golden and the Silver pheasants, are being domesticated in numbers by domestic hen. The birds from the tiny wren to the proud black swan seem to know their host and to enjoy the provision made for them. Even the English sparrow that is despised by the majority of agriculturists have a friend in Mr. Goldie, and it is pleasing to see the delight he takes in telling in a whisper (so that the farmers do not hear him) that he imported the sparrow.

View in Mr. Goldie's Lawn

We should encourage amateur floriculture because well kept gardens and grounds are pleasing to others as well as to ourselves. They make our homes beautiful, and also our city. The love of culture of flowers has a refining influence on all and the presence of flowers must tend to the good of our children.—(E. Mepsted, Ottawa.

The geranium is the most popular window plant, as it is so easy of culture. Given a fair chance, it seldom fails to bloom during the winter.—(Mrs. W. J. McLenahan, Appleby, Ont.

For exhibition purposes cut asters with as long stems as possible.—(Wm. Hunt, O. A. C., Guelph.)

Flowers at the Exhibition

THE exhibit of annuals and perennials at the Toronto exhibition was fully up to the average. Special mention can be made of the sweet peas shown by Mrs. Johnston, of Lennoxville, Quebec; the asters shown by J. H. Lock, and the dahlias and gladioli shown by W. Rennie & Co. Among the many prize winners were the following: W. Rennie, J. H. Lock, Steele, Briggs Co., W. J. Hare, Toronto; C. Scott, J. W. Stockdale, Jas. Ogilvie, H. L. Oakenden, Peter Stevenson, A. M. Wilson, E. Grainger, Peter Murray, E. Byfield, and others. In was the opinion of different exhibitors that a more unsuitable building would be hard to find in which to exhibit flowers. Nature's most beautiful products should have a better building. No other class of exhibitors have been given as little attention as the flower and fruit growers. It is time for a change.

Pruning Hedges and Shrubs*

WM. HUNT, O. A. C., GUELPH, ONT.

What is the best time of year to prune cedar hedges, syringas, etc.?

About the end of April or early in May is the best time to prune a cedar hedge. It should be done before the new growth commences, which is usually about the end of May. Many prefer trimming or pruning evergreen hedges in the fall, as there is usually more leisure time at that season of the year. The objection to fall clipping or pruning of evergreens is that it leaves them bare and rusty looking all winter, the season of the year when evergreens in good color are the most appreciated and admired.

Syringas and almost all flowering shrubs can have all the pruning they require at almost any time from early spring until fall. A large collection of flowering shrubs that I planted over 25 years ago have been kept in splendid shape by an annual pruning or thinning out of the most prominent shoots here and there where required when the shrubs were in flower. If carefully done they can be prevented from growing too large and kept symmetrical and natural looking as well. Flowering shrubs should never be clipped with the shears in July, as is too often done, as it removes almost the whole of the flowering wood for the next season. Besides, it gives the shrub an unnatural appearance. The Hydrangea Paniculata Grandiflora is an exception to this system of pruning. This plant should have the young growth pruned back either in early winter or early spring when the wood has ripened well. The young wood should be pruned back so as to leave three to six inches of the base of the young growth. These spurs will throw good strong blooming wood the following season.

Flower Notes

IN SELECTING PANSIES for a show it is a strong point to have the belting or margined colors as perfectly defined as possible. To secure this it may be necessary to shade the flowers from the sun should it be very bright weather. Pick the bloom with as long a stem as possible, and in arranging them in the dish or vase keep the colors as distinct as you can, as it will help to bring the different shades into effect.—(E. F. Collins, Toronto, Ont.)

Water your plants well before bringing them in and they will not need much water for the first week or two. After they have become accustomed to the change and begun to grow, water twice a week, and when the days grow longer, three times a week. Perhaps some will need more. I had some pans made to fit my shelves and find them a great improvement on the old way of having saucers for each pot.—(Mrs. W. J. McLenahan, Appleby, Ont.

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* A question asked at the convention of the Canadian Horticultural Association, held in Montreal during August.

PERENNIALS FOR CUT FLOWERS

RODERICK CAMERON, NIAGARA FALLS SOUTH, ONT.

COLOR and variety in perennials are legion. For this reason it is a very difficult matter to decide on the specimens which suit best. No two persons nave similar tastes in this regard, and perhaps no two would select the same plants. However, there are numerous good species which give general satisfaction.

PRIMULA—PRIMROSE.

The hardy primroses are among the most beautiful of our spring plants. Primula vulgaris, and the garden forms of it, thrive admirably at Niagara Falls. The climatic conditions help in this, but the soil in which they are grown is the principal agent. It is a loose, rich, black loam that is always moist. Primula officinalis, or cowslip, and Polyanthus thrive under the same conditions. On account of their early flowering (May) they are valuable as cut flowers. They take kindly to pot culture also and are grown for the decoration of conservatories. They grow from eight inches to a foot high, and in several shades of color. They are not reliably hardy in northern sections and should be protected.

CONVALLARIA—LILY OF THE VALLEY.

This plant is well known to everyone, and is noted as a cut flower the world over in June. It grows to a height of about nine inches.

PEONIES—PEONY ROSE.

Peonies bloom in June, and are among the noblest and most beautiful of hardy plants. They are practically indispensable as cut flowers and for the border, and are beautiful in foliage without flowers. There are to be found among them every shade of color imaginable. The Anemone flowered varieties are the best and most beautiful and they are as hardy as the others. There are several excellent varieties among the tree peonies that should be grown by all lovers of flowers, particularly the variety Montan, upon which I have counted as many as 150 open blooms at one time. The tree peonies are not reliably hardy everywhere; therefore, I would rather advise the planting of the herbaceous sorts. The following half-dozen will be found among the best: Grandiflora, pure white; Carnea triumphans, large flesh color; Dr. Andry, rose, centre light, extra good; Edulis superba, extra large, color carmine; Anemonœflora, one of the best of the genus, bright rose color.

ANTHERICUM—ST. BRUNO'S LILY.

I find if these are grown in clumps they are very beautiful, graceful, and fine to cut for small vases. The flowers are pure white and very hardy. They are also very fragrant. I grow two varieties, Liliastrium major and Liliago, height two feet. They bloom in June. I find Liliastrium major to be the best, yet they are seldom seen in gardens.

RUDBECKIA—CONE FLOWER.

There are many excellent varieties among these suitable for the border. They are admired by many for the gorgeous display they make when in bloom. They may be classed among the flowers familiarly known as "cut and come again" variety. Golden Glow needs no description, but I would advise cutting off one half its growth. This will prolong its blooming season two weeks and do away with the necessity of staking. The flowers will be just as large and produced just as freely as if they were allowed their freedom. The best varieties I find to be Golden Glow, yellow, eight to ten feet high; Californica, dark centre, yellow, four feet high; Newmanii, yellow, dark centre, two feet high, and our native variety, which is not to be despised, named Hirta, yellow, dark centre, 2 feet high. All bloom in August and September.

The pinks resemble carnations in foliage and flower and in fragrance, but the plants are shorter. They are equally good for cutting. The following will be found among the best varieties: Dianthus plumarius, garden or Scotch Pink; Dianthus plumarius alba plena, double white pink; dianthus plumarius roseus pleno, double, rose color. They bloom in June and grow to 18 inches high.

THE IRISES.

The Irises resemble each other in foliage and habit. Some produce flowers eight to 10 inches across, and in every shade of color found in flowers, many equalling tropical orchids. They are prized highly as cut flowers for vases, and as decorations for bridal parties. I will name six of the Germanicas first: Atropurpurea, purple, early; Aurea, golden yellow, very good; Florentina, white, free, sweet scented; Flavescens, primrose yellow, large and fine; Innocence, pure white, one of the best; Mad Chereau, white edged violet, good. Height two to three feet. They bloom in June.

The Iris Kœmpheri bloom after the Germanicas. Blue Danube, indigo blue, yellow center; Eclipse, reddish purple, very good; Malmaison, light veined with blue; Othello, rich purple, lighter center; Turban, light pink, purple center; Orion, reddish pink, are among the best of these.

ASTILBE OR HERBACEOUS SPIRÆA.

All varieties of these plants are very free blooming. There is nothing more graceful as cut flowers for all purposes, and they are very hardy and easy of culture in any good garden soil. They flower during June and July, and their color is pure white to bright pink. They grow to a height of two feet to six feet. The following will be found to be the best. Spiræa filipendula flore pleno, two feet, producing pure white double flowers; Spiræa palmata, two to three feet, flowers bright pink; variety Palmata alba is the same in every way, but produces white flowers; Spiræa palmata elegans is one of the most beautiful of all, flowers light pink, in long spiral plumes, four feet high; Spiræa Japonica compacta is one of the best and is much used for forcing, two to three feet, flowers white; Spiræa, variety Gigantea, grows to six feet high, flowers pure white in large flat panicles.

LILIUMS.

The liliums are pronounced to be the choicest of all cut flowers, but I would not advise the general growth of them unless the soil and situation are suitable to their requirements. They degenerate and are damaged by heavy freezing on ordinary soil in exposed places. They can be grown fairly well in all soils, but there must be fresh imported stock added from time to time, as two years is their limit. Most lilies do well at the foot of a north sloping wooded bank, if the soil is black much and vegetable matter, mixed with fine sand, a foot deep, with a clay loam subsoil. If there is enough spring water in this soil to keep it moist the lilies will do well. The spring water being warmer than the air passing through the soil prevents its freezing. Besides, the soil is not raised up and down by the action of the frost as is the case with other soils. This prevents the bulbs from being broken and destroyed.

The following will be found to give the best results: Lilium candidum, Japan lily, or St. Joseph's lily, four to six feet high, flowers white, July; Lilium speciosum, L. speciosum rubrum, and variety album, grow two to three feet, and bloom in August; Lilium auratum, or Golden-rayed Lily of Japan, is often seen in yards near the Falls. It is the queen of all the liliums, but like the others does not last more than two years. Lilium Hansoni, Hanson's, will outlive any that I know in this section, leaves in whorls, flowers yellow and spotted, flowers average about ten in number. Lilium Isabellinum and candidum are the commonest grown here. Isabellinum grows to five feet, flowers yellow with a reddish tinge, eight to twelve flowers, is one of the best. Bloom comes in July.

KNIPHOFIA—RED HOT POKER.

These are known by several names. Seven varieties grow in the park and all are good and worth cultivating. As cut flowers, with bright colors for autumn, there is no flower in the border can equal them. They grow two to five feet high and are perfectly hardy if treated as recommended for the liliums, all but the situation, which should be an open sunny place. Many of them die because the water is in the clasping sheathlike leaves around the crown, freezing there and rotting the crown. Late in the fall all the leaves should be twisted into a knot around the crown, and on this knot should be placed a piece of board or stone to shed the water. The whole should be covered with leaves or soil so as to appear like a hill of potatoes. Varieties Grandiflora and Pfitzerii are the best. A fine specimen of the latter is shown in the accompanying illustration. Names commonly applied to the plant are Tritoma, Flame Flower and Torch Lily.

Kniphofia—Flame Flower

LATHYRUS—EVERLASTING PEA.

It is only where the lathyrus has been allowed its freedom for several years, and upon damp rich soil, where it can continue growing and be allowed to ramble over some branches at will, that its beauty and value can be appreciated. There is no better flower grown for cutting purposes. There are two varietes that should be found in every collection of perennials—Lathyrus latifolius and Lathyrus latifolius alba. The one is bright red and the other pure white. They grow six to eight feet high.

OTHERS WHICH ARE GOOD.

There are numerous other common plants which can be grown without trouble and which are very beautiful. Of these only brief mention can be made. Centaurea Montana produces five or six different shades of color. Bloom comes in July and August, and if the old stems are taken off flowering continues until late fall. Henchera sanguinea, or alum root, is fine in July. Gypsophila paniculata or chalk plant, Thalictrum adiantifolium or Maidenhair Meadow rue, and Lythrum salicarium or Loose Strife, a native of Ontario, should be in every perennial border.

Phlox, Helianthus or Sunflower, Helenium or Sneezewort, Pyrethrum or Feverfew, Anemone or Wind Flower, Aquilegia or Columbine, Coreopsis, Caliopsis or Tickseed, Delphinium or Larkspur, Gaillardia or Blanket Flower, and many others are worthy of mention.

However, the lover of flowers can select from the specimens mentioned, and by getting a few seeds of new ones recommended in catalogues a collection suitable for a border in any garden will soon be found.

THE BEST STORAGE FOR ROOTS

As severe weather approaches the vegetable grower must attend to the harvesting and storing of his root crops. Light frosts do not damage them much, especially if there is a covering of heavy foliage, but if sufficient frost comes to freeze the ground there is danger of injuring the keeping qualities. Parsnips will stand more frost than beets or carrots. The harvesting of these crops entails considerable work. Different means can be adopted to lessen this labor. Special care must be taken not to injure the crown of the beet. The best plan is to twist the tops off. If a knife is used many of the roots are liable to be cut and rot soon sets in. With carrots and parsnips it matters little whether the roots are cut or not as far as affecting the keeping quality is concerned. When labor is scarce many growers take the tops off with a sharp hoe and then plow out the roots. A better plan is to plow along the row as closely as possible and then pull the roots and cut the tops off with a large knife.

Most growers leave part of the parsnip crop in the ground over winter. The objection to this method is that they cannot be dug before the frost is out in spring and by that time there is a meagre demand.

Where large quantities are grown the storing is usually done in pits. They must be kept cool. If put in a cellar where the air is dry the roots wilt and become corky unless they are covered with earth or sand. Most growers recommend leaving them outside in pits with scanty covering until severe weather sets in. A temperature near the freezing point suits best.

" I generally leave about one-third of my parsnips in the ground over winter," said Mr. Wm. Naismith, Falkenburg, to The Horticulturist. " These can be dug in the spring as soon as they begin to sprout. I put them in a pit and put enough earth over them to keep them dark. If the light gets at them they turn yellow and become of poor quality.

" Frost will not hurt parsnips, and as there is not room enough in the cellar I leave them outside in pits. Only a light covering of earth is necessary. I leave an opening at each end of the pit to carry off the moisture due to evaporation. They keep well in cellars if covered with sand. A good plan is to barrel them in sand.

" Carrots and beets will stand considerable frost when in the ground, but none after they are pulled. Cellar storage, the same as for parsnips, suits them."

" I store beets, carrots and parsnips in an ordinary cellar," remarked Mr. Chas. Plunkett, Woodbridge. " The addition of a little sand around them keeps them as fresh as if they were in the ground."

STORING THE CABBAGE CROP

Market gardeners near towns and cities generally find cabbages a profitable crop. There is always a good sale during the summer for the earlier varieties and in late fall for later varieties, but the large growers have to winter over considerable quantities in order to have a supply for filling orders during the winter months. Every grower should aim at getting rid of the more mature heads or those which are nearly ready to burst, in the fall, as they do not keep as well as those which are less mature.

Many experienced gardeners claim that a few degrees of frost does not injure the keeping quality of cabbage, but it does them no good, and severe freezing is very injurious. Most growers aim to have them stored before frost comes. If stored when in good condition good keeping varieties can be held over until spring.

Many methods of storage have been tested. The prime requisite is that they be kept cold and moist. Warmth and dampness are sure to cause rot in a short time. Frost does little damage provided they are allowed to thaw out before being disturbed. The general method adopted by large growers is to put them in trenches and cover them with eight or 10 inches of soil and sufficient mulch to prevent hard freezing. Others recommend putting them directly into a cool cellar and storing in bins three or four feet wide so that a free circulation of air is allowed. For small growers who wish to keep a few over winter for home use the best plan is to bury the head in sand or to heel in the roots. In every case all the loose outside leaves should be removed before storing.

"If planted late," said Mr. Guthrie, of Wright avenue, Toronto, to The Horticulturist, "the St. Dennis is a good keeper. When planted early 50 per cent. of them crack. Quintal is one of the best keepers. The Drumhead Savoy also gives good satisfaction. As a rule I do not pull late varieties of cabbage before November 15. They should be pulled and left roots upward for a week or so to allow all the water to drain out. If water remains in the head rot soon develops.

"I store them root and all because they keep much better. They require too much room in a cellar, so I put what is not sold before winter into long pits. Large ones can be laid two deep, while smaller ones will keep well if three layers are placed. They are put on the surface and furrows turned in with just enough space between to allow the cabbages to be placed roots together and heads outward.

"Then they are covered with clay. The less soil is put over them the better as long as they are covered. I want them to be frozen as hard as frost will freeze them, but alternate freezing and thawing would spoil them. An air hole is left at each end so that there is no danger of their heating.

"In the fall I always store some in the cellar for present use. When more are needed a pit is opened and enough are brought in to fill sales for two or three weeks."

"I have a special frost-proof cellar for celery and cabbage," said Mr. J. E. Terrill, of Picton, to a member of The Horticulturist staff who visited his place recently. "The cabbage are pulled about the first week in November and the roots cut off. Then they are piled in this storehouse in pyramidal heaps, bottom side up, so that the water drains out. If they are put in when wet, rot sets in. They do not rot so quickly with the roots cut off and piled this way as they do with roots on. I can have nice solid cabbage up to May 1 easily."

The method practised by Mr. Jas. Gibbard, of Doncaster, is to plow two furrows toward each other, leaving space enough for piling two rows of cabbages with the roots together. "When one layer is put in," said Mr. Gibbard, "I cover it with earth. Then another tier of cabbage is put on and again a thin layer of earth is added. Cabbage are then put along the centre to round the pit up nicely, and the whole is covered with eight or 10 inches of earth. In case heavy frost comes without any snow it is well to cover with long manure. If the deep covering is not added until hard frost comes there is no need of air holes.

"Some growers claim that heavy frost does not hurt cabbage, but I find that those on top are always the first to go, and in the winter of 1903 I lost many, so I have decided that hard freezing damages them."

I prefer using compost as a fertilizer in the fall on my garden, and then there is no need for spring plowing.—(Geo. Benner, Burlington, Ont.

VEGETABLES AT THE EXHIBITION

THE display of vegetables at the Canadian National Exhibition was not as large as the extent to which truck gardening is carried on in Ontario would warrant. Whether this is on account of poor treatment at the hands of the exhibition management or because of poor crops this season could not be definitely learned from the gardeners. A general lack of interest seems to be the real cause. One exhibitor claimed that some valuable prizes had been withdrawn from the vegetable prize list, while another explained that fourth prizes had been added in several sections to make up for this withdrawal. To say the least, the competition was not as keen nor were the entries as numerous as they should be. The prize winners could almost be counted on the fingers of one's hands.

Growers from Humber Bay carried off many prizes. In beets the awards went to J. B. Guthrey, Dixie, and W. Harris and J. Dandridge, Humber Bay. The prizes for the different varieties of cabbage were divided among R. J. Taylor, Brantford; W. Harris, Brown Bros., and J. Dandridge, Humber Bay, and J. B. Guthrie, Dixie, while Harris and Brown Bros. carried off first and second for best collection of cabbages.

The display of onions was very good. The prizes went to Harris, Brown Bros., Guthrey, Dandridge, Taylor and F. W. Krause, Guelph. The prize parsnips were owned by Chas. Plunkett, Woodbridge; Wm. Naismith, Falkenburg, and Taylor. A fine collection of peppers owned by R. J. Taylor deserves special mention. S. D. Furminger, Guthrey and Harris shared the prizes with Taylor for peppers. W. Harris won first and Guthrey second for collection of table squash.

WINNERS FROM MUSKOKA.

The vegetable-growing qualities of Muskoka soil were shown by the fine specimens shown by Mr. Wm. Naismith, of Falkenburg. His fine collection of potatoes won first place this year for the fourteenth time in succession. This year he carried off every first but one in potatoes. When Mr. Naismith gets a new variety of good quality he does not hide it in one corner of his cellar for fear some other grower might get some for seed. He brings the best of them to the Toronto exhibition, so that others may see what can be grown, and sells all he has to spare.

The prize for collection of garden herbs went to Chas. Scott, of Melville Cross. For collection of vegetables W. Harris won first, J. B. Guthrey second and Broadview Boys' Institute, Toronto, third.

EXPERIMENTS IN GROWING POTATOES

THE effect of certain arsenites on potato foliage is dealt with in Bulletin 267 of the New York Experiment Station. Experiments were carried on with Paris green and arsenite of lime. The former was applied four times by the three common methods: with water, with lime water, and with Bordeaux mixture. Rows were left unsprayed for checks. As high as four and a half pounds per acre were used without injury.

The experiment showed that Paris green has a fungicidal value at least one-third as great as Bordeaux. Rows treated with Paris green and water yielded 46 bushels per acre more than untreated rows, while those on which Paris green and Bordeaux were applied gave a slightly higher yield than those on which Bordeaux alone was used. It was further shown that arsenite of soda may be much more safely used with Bordeaux than with lime water, and the conclusion was that it should only be applied with Bordeaux mixture. The Paris green, if applied in moderate quantity and evenly distributed, is not injurious to foliage when used with lime water or Bordeaux mixture. Rows treated with Bordeaux alone out-yielded those treated with arsenite of soda in Bordeaux by 34 bushels per acre. This suggests that, perhaps, the soda arsenite may do damage to the crop though not showing any effect on the foliage. The use of arsenite of soda and lime is attended by considerable risk. The part which copper sulphate and lime plays in spray mixtures is plainly given. Those interested in spraying should write for this bulletin.

QUALITY TESTS.

"Quality in Potatoes" is discussed in Bulletin 230, Cornell University. It is pointed out that the quality depends on the amount of water, the amount of starch, and the richness of the potato in nitrogenous matter. After careful investigation it was considered that the quality and mealiness of a potato when boiled depended on the daily range of soil and atmospheric temperature during the growing period, on the degree of ripeness of the tuber when the plant dies, and on the physical condition and type of the soil. Since tubers grow at regular nodes on the stem above the planted tuber it is recommended that planting be five or six inches deep in good soil so that enough nodes may be formed to accommodate the tubers which the plant is capable of bearing. If planted deeper than six inches moisture and temperature conditions are unsuitable for tuber development at the lower nodes and the result is small and scabby potatoes. If planted shallower than three inches the variation in temperature and moisture is too great for proper development. The result is small, compound and sunburnt potatoes. Long tubers which grow sloping in the ground show a difference in quality in the different halves. The desirable conditions, 65 to 75 degrees temperature and uniform moisture, are most nearly approached at a depth of two to six inches, and it is there that the best tubers are found.

WINTERING THE CUCERBITS

SPECIAL care in handling is necessary if the gardener wishes to have success when storing squashes, pumpkins, melons and such crops. Little handling should be given before the skin has become thoroughly hardened. They are injured by very slight frost, although the injury may not be apparent for some time. Those who have had experience in harvesting and storing these crops recommend that they be pulled before frost comes and put in piles in the field. There they can be left exposed to the sun by day, but should be covered at night to prevent injury from frost. In case a stem is broken off rot soon develops. For this reason it is recommended that the stems be cut off to not more than one inch long when harvesting so that they cannot be used as handles when loading them on wagons. When hauling them to the storehouse they should be placed on a bed of hay or straw to prevent bruising.

The best storage is dry atmosphere and cool temperature, although they keep for a considerable time if the temperature is comparatively high. Authorities recommend placing them on shelves one tier deep.

"I always aim to have the squash harvested before frost comes," said Mr. T. W. Stephens, of Aurora, to The Horticulturist recently. "They should be off the vines in early October to escape early frosts. They must be kept dry and cool, but never frozen. I always put them in a dry shed or feed room where there is no dampness. They keep much better in a dry room free from frost than in a cellar. If put in the cellar in early fall the heat and moisture causes them to rot in a short time. By keeping them in a dry room just above the freezing point I have had them until May 24. Citrons and watermelons can be kept the same way, but the latter will not keep longer than Christmas."

Tomatoes Until Christmas

"I CAN have ripe tomatoes for use until near Christmas," said Mr. Jas. Gibbard, of Doncaster, to a member of The Horticulturist staff who visited his place a short time ago. "Just before frost comes the green ones are picked and stored in a cool dry place. Where there is a dampness they soon rot, and if there is much heat they ripen quickly.

"I have taken fresh tomatoes to England in that way. When I reached the Old Country they were not quite ripe. If they get any frost before being put away they will not keep."

Marketing Tomatoes

"THERE is good money in growing early tomatoes for the local market," said Mr. Wm. Waller, of Bartonville, to The Horticulturist recently, "but we cannot get rid of all our crop in that way. A local commission buyer takes great quantities, and although more might be obtained on the Hamilton market for a few at a time it pays to sell to him.

"Selling to the canning factory, also, is not so profitable for the same quality of tomatoes. The commission buyer wants good quality and pays a good average price."

The Asparagus Bed

ALTHOUGH asparagus is a wholesome and most profitable garden vegetable it is not widely grown. It is perfectly hardy and comes in early in the spring when there are few garden crops fit for use.

Speaking to a representative of The Canadian Horticulturist who visited his place at Picton recently, Mr. J. E. Terrill said: "I have about four acres of asparagus. I take a good harvest from early in the spring until about July. Then I cease cutting and harrow the beds well. This destroys most of the weeds. The patch is left throughout the summer and in the fall before it ripens the whole is cut off level with the ground. A thorough cultivation is then given with the Acme harrow and a light coat of well rotted manure added.

"The bed is left in this condition over winter. In the spring as soon as warm weather renders the ground fit for cultivation the Acme harrow is again used to partially mix the manure with the soil. In a very short time the crop is fit for cutting. I prefer to cut when about six inches above the ground, as underground stems are liable to be tough."

"After we stop cutting the crop," said Mr. W. A. Best, gardener for Earl Spencer, Picton, "the asparagus bed is let run until October. Then all the old stems are cut off and burned. After that a disc harrow or some such implement is run over the patch and a heavy coat of rotten manure applied. In the spring it is disced both ways to work the manure into the soil."

Tomatoes can be had for slicing up to April or later by taking solid specimens from the vines, being careful not to detach the calyx from the tomato, and preserving them in a solution made of five quarts of water to one of vinegar.—(W. H. Armstrong, Cornwall, Ont.

The Canadian Horticulturist

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THE HAMILTON SHOW.

The Hamilton Horticultural Exhibition, for a first effort, was a success, but it can be greatly improved another year. In spite of the best efforts of those in charge, the fact remains that the bulk of the fruit and vegetable growers of the Niagara district did not realize that the show was established for their benefit and that they were expected to take a prominent part in its management. Should the Ontario Department of Agriculture decide to continue the show another year a committee which will represent all the horticultural interests of the Niagara district ought to be selected to have charge of it.

This committee should start work early in the season and should be composed of one or more representatives of each of the horticultural societies, of the Ontario, Niagara district and Burlington fruit growers' associations, of each of the several vegetable growers' associations, and possibly one or two members of the Hamilton City Council. Much of the success of the Canadian National Exhibition has been due to the work of the members of the Toronto City Council. Sub-committees could be appointed for fruit, for flowers, and for vegetables, and to these committees would have to be left largely the making of all arrangements connected with these departments of the exhibition.

It would be well, for convenience of management, to have the president and secretary located in Hamilton. For these positions it would be difficult to secure two better men than Mr. McCulloch and Mr. Dickson, the president and secretary of this year's exhibition, as the success of this year's show was due in a large measure to their faithful, efficient work. Small local committees could have charge of the details of management. If this exhibition is to fulfil the objects for which it was started the best men the Niagara district can produce should be on the committee of management.

THE DOMINION CONFERENCE.

The conference of fruit growers from the different provinces of Canada, which the Dominion Department of Agriculture is arranging to hold next winter, will be the most important gathering of fruit growers ever held in Canada. Such a meeting has long been needed. Each province has difficulties of its own which its growers will have to grapple with by themselves, but there are larger questions which affect all the provinces, and their proper consideration can only be secured through a conference of growers from each province.

One of the most important subjects that can be dealt with is the advisability of forming a permanent body, representative of the fruit growers in the different provinces, which could meet annually or at least once every two years. Such a body, owing to the expense of attending its meetings, would have to be small. It might be constituted of the presidents of each of the provincial associations, and could meet in turn in the different provinces at the time of the holding of their provincial convention, but separately.

The associations could hardly use a portion of their funds to better advantage than in sending delegates to such meetings. In this way it would be possible for fruit growers to have a direct say in all matters of Dominion legislation relating to their interests. The honor of representing a provincial association at one of these conferences would be highly prized and would add to the interest taken in the work of the provincial organizations. A determined effort on the part of fruit growers will easily result in the formation of such a body.

The advance of the times is forcing vegetable growers, as well as growers in other lines of work, to devote more attention to improving their methods. Varieties of vegetables and practices which proved profitable a few years ago are no longer so, and the growers who realize this first and are the quickest to grasp the demands of the situation will reap the largest returns. The recently formed vegetable growers' association has already done much to awaken an increased interest in matters of this kind. Greater advances will be made during the next five years than have been during the past ten. Is it not strange that with all the fruit, flower, bee, poultry and other publications there is none devoted exclusively to the growing of vegetables?

Most of the provincial fruit growers' associations in Canada have committees at work preparing the programs for their annual conventions which will be held during November, December and January. Care should be taken to see that time is allowed for a discussion of the best method of bringing pressure to bear on the Minister of Agriculture to see that the chief of the Dominion fruit division, instead of being under the control of the dairy commissioner, is given full control of his department. The fruit interests of the Dominion are of sufficient importance to require a commissioner who shall be independent of the heads of any of the other branches of the government service.

Evidence of the value of The Canadian Horticulturist as an advertising medium continues to accumulate. The latest one of our readers to win one of the prizes offered to readers who purchase from advertisers is Mr. R. H. Ellis, of Leamington, who bought goods to the value of $270 from Pilkington Bros., of Toronto, and $8.80 worth from the Foster Pottery Co., of Hamilton, through seeing their advertisements in The Canadian Horticulturist.

There are few of our readers who have not a few friends who would not profit were they to subscribe for The Horticulturist. This they would do were the good points of the paper properly drawn to their attention. If our readers will help us gain a few subscribers it will enable us to improve the paper and everyone will benefit. Won't you do your part by getting us at least one new subscriber for the balance of this year and all of next year for only one dollar?

Boxes Not Profitable Packages

W. R. DAVIS, OAKVILLE, ONT.

I find it is not as profitable as I could wish to pack apples in boxes, except for really good stock. Last year I put all firsts in boxes, and seconds in barrels. The returns showed that the firsts, except Blenheim Orange, did not bring a high enough price to warrant my doing so this year, considering the extra price of boxes and trouble of packing. Baldwins seemed to sell better than Spys in boxes.

I did not have, as a rule, very much trouble securing boxes. Last year I got them from Burlington. They were 9 x 12 x 18, and ran four to the barrel, but I would rather use the larger box, that runs three to the barrel, which is the size adopted by the Fruit Growers' Association.

FRUIT GROWERS VEGETABLE GROWERS AND AMATEUR FLORISTS

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It is the only paper in the Dominion that will keep you fully posted on fruit, vegetable and floral matters. Sample copies sent on request.

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Trial subscriptions, from October until the first of next year, will be accepted for 10 cents. For every three trial subscriptions you send us, we will extend your subscription for one month.

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Those of our readers who are taking The Horticulturist through horticultural societies or fruit growers' associations will be allowed to retain a a liberal commission on all new subscriptions or we will arrange with the secretary of their society to extend their next year's membership.

Free sample papers will be sent to any one who applies for them.

WONT YOU HELP US TO REACH THE 8,000 MARK?

The Canadian Horticulturist

TORONTO, ONT.

THE ONTARIO HORTICULTURAL EXHIBITION

Arrangements are rapidly being completed for the Ontario Horticultural Exhibition, which will be held in Massey Hall, Toronto, November 14-18. The Governor-General has been invited to open the exhibition on Tuesday afternoon, November 14.

A committee representing the various organizations interested in the exhibition visited Massey Hall recently to arrange for the allotment of space. It is intended to have striking exhibits of flowers, fruits, vegetables and honey both upstairs and down, so that people who visit the hall will be pleased with the general effect of the exhibition. All commercial exhibits will be shown in the basement of the hall, where the demonstrations in fruit packing, etc., will be given. The prize lists this year have been considerably increased, and owing to the advertisement the exhibition received last year, it is expected there will be an increase in the number of exhibits this season.

At a meeting of the committee of management held during September it was decided to sell three coupon tickets for 50 cents, to place the general price of admission at 25 cents, and to have a special children's day on Saturday, when children will be admitted for 10 cents, or three for 25 cents. Members of the Ontario Fruit Growers' Association, the Ontario Vegetable Growers' Association, and of the other bodies interested in the exhibition will be sold 50 cent tickets which will admit them to the exhibition at all times during the week.

An effort is being made to secure the use of a large building immediately adjoining the hall, in which it will be possible to hold the convention of the Fruit, Vegetable and Bee Keepers' Associations simultaneously. Committees are at work preparing programs for these conventions. It is intended to secure noted authorities as speakers. This will be the first annual convention of the Ontario Vegetable Growers' Association, and a great deal of interest is being taken in it on that account.

THE WORK OF THE HORTICULTURAL SOCIETIES

During September horticultural societies in the different cities and towns of Ontario demonstrated that their labors have not been in vain. Flower shows were held by many societies, while several also had a concert in the evening at which music and practical addresses made up the program.

DESERONTO'S FINE EFFORT.

The show of the Deseronto society was most successful both as regards the quantity and quality of the exhibits, especially when it is considered that not a dollar of the funds of the society is paid out in cash prizes. The strongest evidence of the good work that is being done is the large number of lawns and gardens which are kept in first-class condition among the working classes. Many of the back yards and gardens would do credit to the professional gardeners. The judge was Mr. E. F. Collins, of the Allan Gardens, Toronto, who writes to The Horticulturist as follows: "Some of the exhibits would put to shame many I have seen at much larger places. Special mention may be made of the Rex begonias and Tuberous begonias, which were very fine for the amateur classes."

KINCARDINE FLOWER SHOW.

The annual show of the Kincardine society was held August 30, and at the special request of some influential citizens the president and secretary kept it open the following evening. Costly plants of rare excellence and beauty, as well as many equally fine though less valuable, filled the side tables. The center tables were filled with cut flowers tastefully arranged on the tables by some of the ladies of the society. To say that the display was grand conveys but slightly the striking effect of a large hall filled with healthy and vigorous plants and gorgeous bouquets of the choicest flowers, all grown by amateurs. This shows that the seven years' life of the society has cultivated the tastes of the citizens. It has also been the means of beautifying many gardens and homes belonging to members and their friends. The premium list of the past year consisted of 14 collections, made up of fruits and flowers. Each member on paying one dollar is entitled to one of the premiums free, and besides we make a present of a year's subscription to The Canadian Horticulturist, a dollar magazine. It is the neatest, cleanest and most instructive magazine on the subject that I know of, and ought to be found on every center table. Every year adds new flowers, shrubs and trees to our list. Many of the progressive farmers and fruit growers are becoming members, as the cost is little and the gain great.—(Joseph Barker, Sec'y.

A SUCCESS AT CARDINAL.

The Cardinal society held its annual exhibition September 6 and 7, afternoon and evening. Notwithstanding the fact that several of the old officers and active workers of the society have left the organization during the past year, and the idea that the exhibit this year would be a failure, our exhibition, though late in the season, was the best in quality and selection of house plants and cut flowers that the society has put before our villagers. That our flower show is popular and becoming more so was evidenced by the hall being crowded both evenings. —(E. E. Gilbert, Sec'y.

GRATIFYING RESULTS AT CAYUGA.

The Cayuga society has completed its work this season with gratifying results. Increased interest has been awakened. The public gardens at the Court House Park, the high and public schools, and many private gardens are more beautiful than ever. Our country school director, Principal Neale, is making a show place of the Decewsville public school grounds. Our distribution to members included 1,000 Norway spruce trees, 480 geraniums, 480 coleus, and several hundred gladioli. The well defined plan of this society that a horticultural society should be a factor in the public improvement of its neighborhood has been followed closely again this season with good progress. I cannot too highly praise our officers in their zealous and unpaid efforts, and the courtesy of our official florist, L. H. Weaver, of Dunnville, and the energy of our secretary, F. G. Lishman.—(A. K. Goodman, Treas.

THE FOURTEENTH SHOW AT GALT.

The Galt society held it fourteenth annual exhibit on August 30 and 31. There was a good exhibit in all classes, the specimen ferns and coleuses being especially fine. The cut flowers were also of a high quality and comprehensive in character. The show was not patronized as well as it deserved to be. W. Hunt, of the O. A. C., Guelph, was the judge of pot plants, and A. H. Ewing, of Woodstock, awarded the prizes for cut flowers. H. S. Peart, of the O. A. C., judged the fruit and vegetables.

NEEDLEWORK AT PRESTON.

The Preston society held a successful show in the skating rink on September 6 and 7. The exhibits were of a high order and competition in many classes very close. An exhibit of ladies' needle and fancy work gave an added interest to the exhibit. The attendance was good. W. Hunt, of the O. A. C., Guelph, judged the plants and flowers, and E. Lane, of Galt, awarded the prizes for the fruit and vegetable display.

SCHOOL CHILDREN SHOW AT SIMCOE.

In the spring the Simcoe society distributed seeds among the children of the public schools, with the understanding that a big flower show would be held in the fall. The show was held in the drill shed September 7 and the success of the scheme can be judged from the fact that there was almost four times as many entries as in 1904. The display on the tables was grand, and the competition was so close that it is thought more than three prizes should have been awarded. Judge Robb and Mr. W. S. Tisdale awarded the prizes. Many vegetables were on exhibition. In the evening band music and appropriate recitations added to the enjoyment of the visitors.—(Henry Johnson.

EXCELLENT SHOW AT BRANTFORD.

The executive of the Brantford society were well pleased with the results of their distribution of about 6,000 packages of seeds to the school children. The exhibition of flowers held on September 15 was a huge success. The secretary recorded about 600 entries of asters, verbenas, phlox drummondi, scabiosa and salpiglossis, besides about 50 entries of baskets of cut flowers. In all about 130 prizes were awarded. The premiums given consisted of fine specimen plants of palms, ferns, dracenas, araucarias and bulbs. The evening meeting was presided over by Mr. Dempster, president of the society. In a very interesting address Mr. Wm. Hunt, of the O. A. C., Guelph, commended the action of the Brantford City Council in granting the society the sum of $100 as being one of the best outlays the city had ever made. Those present heartily endorsed the outlay by loud applause. Directions for the care and culture of the plants awarded as premiums were given by the speaker in his address, as well as a practical demonstration on the potting of bulbs and their after culture and care.

ELMIRA'S SECOND ATTEMPT.

The directors of the Elmira society are to be congratulated on the success of their second flower show, which was held August 24. A large number of fine specimens of the floral kingdom were on exhibit. The children's exhibit of asters grown from seed given to them by the society was particularly fine. The admission receipts show that over 2,000 people, besides the children, visited the show.

KEEN COMPETITION AT BELLEVILLE.

Last spring the Belleville society distributed flower seeds among the children of the different classes in every school in the city. In September the scholars from the high, public and separate schools were in their glory displaying the flowers. The total number of entries was about 300. Each school had its display upon one of the large tables which are in the building, and it was rather difficult to tell which school had the best exhibit. In the afternoon the building was open to the public and many of the parents and others visited the show, all being apparently much pleased.

FEWER ENTRIES AT STRATFORD.

The City Hall was the centre of attraction for a large number of citizens on the evening of September 6 at the opening of the Stratford society's annual show. Flags and bunting along with the numerous tables of beautiful plants and flowers made the hall a pleasant place to spend the evening. There was a noticeable falling off in quantity but no deterioration in quality. The flower and plant department was very attractive. Among the flowers were some very fine sweet peas, single petunias and asters, while several superb specimens of the rubber plant and begonia were highly admired. The judging of flowers and plants was done by Mr. Wm. Gammage, of London. In pot plants Messrs. Wm. Sanderson and S. B. Webb carried off most of the prizes.

The vegetables were somewhat of a disappointment, the display being quite small. The fruits occupied one table. Apples were a fine sample, but inferior to last year's.

Report Your Meetings

Officers of horticultural societies are earnestly urged to send notes regarding the doings of their societies to the society editor for publication in each issue. Programs of meetings held, copies of addresses read, and subjects discussed are all interesting to our readers. Let us have all you can. The more the better. Contributions can be received up to the 22nd of each month.

VEGETABLE GROWERS ORGANIZING

The Ontario Vegetable Growers' Association has set to work in earnest to organize branch associations throughout the province. A special effort is being put forth to have thorough organization through local associations in the different vegetable centres before the Horticultural Exhibition in November. During August Mr. Andrew McMeans, of Brantford, made a tour of western Ontario for the purpose of forming local associations and met with varied success. As a result of his trip Mr. McMeans hopes to have several flourishing associations at different points. Growers around Leamington were enthusiastic and a strong association was formed with J. S. Fraser as president; J. L. Hilborn, vice-president, and E. E. Adams, secretary-treasurer. It was decided that the best means of getting the different members in line would be to hold meetings at their respective homes.

Flourishing organizations are promised for several other centres. At Woodstock Messrs. Doyle and Gabriel Elliot were well pleased with the move and have promised to do what they can. The good work at Chatham was left in the hands of such enthusiasts as Messrs. Ross, Collins, Clarke, Findlay and Everetts.

The growers in the Windsor district are chiefly French Canadians and know merely enough English to make sales. However, at Cabbage Point, a few miles from Amherstburg, Mr. Hilare Gignac was sure that an association could be formed and 150 members secured before fall. Messrs. Wigle, of Ruthven, and Coatsworth, of Kingsville, can also be counted on for support.

There is a general feeling among the growers that their crop should be protected by a duty at least equal to that imposed on similar Canadian products going south.

FRUIT CROP CONDITIONS

Reports received by The Horticulturist during September from the leading fruit sections of Ontario tend to verify the report published last month that the apple crop of the province this year will be light and prices high as compared with last year. In many sections the crops have been sold and the growers regret they did not hold out for better prices. The United States and British crops are, also, behind the average, and a keen demand from the Old Country is expected.

Grapes and plums will be larger crops than last year. The quality generally is reported to be good. The following are some of the reports that have been received:

ESSEX COUNTY.

The apple crop is not more than 40 or 50 per cent. of last year's. The greater part is already disposed of. Some of the best orchards sold for a lump sum on the trees. Other buyers are giving $1 per barrel and do their own picking. There does not appear to be any regularity in prices given as the quality is not uniform.—(W. W. Hilborn, Leamington.

KENT COUNTY.

Our crop of apples this season promises to be very fine, especially where thoroughly sprayed. In quantity it will be about half of last year's crop. Sales so far are very satisfactory, and we are looking forward to a very successful season.—(W. D. A. Ross, Chatham.

WENTWORTH COUNTY.

Japan plums and Lombards are a heavy crop, while other varieties are only about one-third. Fancy lots sold at 30 to 40 cents. Japan varieties and Lombards brought 10 to 25 cents. About 50 per cent. of the Lombards are rotting. Grapes are not more than half a crop, but clean and ripening early. Some Concords and Niagaras have sold at 15 or 16 cents per nine pound basket. There is only a light crop of apples, probably 25 per cent. full crop. Winds and codling moth are playing havoc and not more than one-half of the crop will be packed as No. 1 or No. 2, and there is every likelihood that a No. 3 grade will find a market. As high as $1.50 per barrel has been obtained for No. 1 and No. 2 on the trees.—(Joseph Tweddle, Fruitland.

The grape crop is in every way better than last year, very clean of rot and quality never better. Plums are heavier than last year and prices much lower. The apple crop is very light, quality fair, prices ruling high, about $1.50 per barrel on the trees, purchaser furnishing labor, barrels, etc. Some have done better than this.—(E. M. Smith, Winona.

THE ST. CATHARINES DISTRICT.

Apple prospects have not improved. Some isolated orchards have nice crops, but majority of orchards have very little fruit. Plum crop has been disappointing. Market was oversupplied with Japan varieties, and it has not been possible to secure ready sale for the later kinds at satisfactory prices. Many kinds have not been harvested in full on account of low price and poor demand. Grape crop promises to be of excellent quality and fair proportions. If weather remains warm a good demand is expected at reasonable prices. Growers are marketing heavily.—(W. H. Bunting, St. Catharines.

BURLINGTON DISTRICT.

Apples are one-half of last year's crop. Prices range from $1.50 to $2.55 per barrel for No. 1 and No. 2 stock, grower to pick and deliver at the station. Grapes are 100 per cent. better crop and prices hun two to four cents per pound gross. Plums are double the crop, with the price 17½ to 25 cents per 11-quart basket at station.—(A. W. Peart, Burlington.

GEORGIAN BAY SECTION.

The apple crop in the Georgian Bay district from Collingwood to Owen Sound and in the Beaver Valley, is exceedingly light, not more than 10 per cent of a full crop. There are, however, some very good apples, especially Russets. The winds of the last few days have very much reduced them. In the Simcoe district the crop is better, but the orchards are generally small. It is nearly all bought by one man. He has said there will be about 7,000 barrels. The price paid is 75 cents to $1.45 per barrel.—(J. G. Mitchell, Clarksburg.

SOUTH ONTARIO.

The apple crop in the southern part of Ontario county will be heavier than last year. The crop along the lake is light, but further north is exceedingly good. The apples are clean and of good size, but there is quite a lot of wormy fruit. Apples have been bought at all prices up to $1.60 per barrel for everything on the trees in one good orchard. Almost all the apples are sold.—(Elmer Lick, Oshawa.

NORTHERLY SECTIONS.

Apples are as large a crop as last year, but the fruit is much larger and finer. Not so many codling grubs in the fruit apparently even where not sprayed, and that is generally. I do not hear of any sales being made so far, and I have inquired a good deal.—(Stanley Spillett, Nantyr.

The apple crop this year in Grenville county will be easily double that of last year, chiefly Fameuse. I should judge that two-thirds of the crop has been sold on the basis of $1 on the tree for No. 1 and No. 2. Many orchards will grade low, as the spot spread rapidly in August in orchards that were not sprayed.—(Harold Jones, Maitland.

THE DOMINION FRUIT GROWERS' CONFERENCE

Arrangements are being made by Mr. A. McNeill, chief of the fruit division, for the conference of fruit growers from the different provinces of Canada which will be held in Ottawa next winter. An outline of the subjects that will probably be discussed has been prepared and it has been suggested that the various provincial associations had better consider these matters at their annual conventions so that the delegates they send to Ottawa may be prepared to debate them.

The suggested subjects to be discussed at the proposed conference are :

1. The preparation of statistics and fruit crop reports, including acreage of small fruits by counties ; number of fruit trees by counties ; estimation of value and quantity of fruit crop ; preferred varieties; bi-monthly or monthly reports of fruit crop conditions, including the weather, insects, fungous diseases and market quotations.

2. Transportation by rail. Rates ; classification ; discrimination in rates between individuals and firms, between long and short hauls, between places or territories, between commodities ; station accommodations ; speed of service and delays ; supply of cars (delays in supplying cars) ; facilities for tracing cars en route ; delay in settling claims ; special facilities for fruit shipments, "decking" cars for baskets, ventilated cars, refrigerator and frost-proof cars, heated cars, transportation for attendants in charge ; bills of lading, shipper's count, exemption ; demurrage charges ; competent station employees ; transportation by express. Transportation by water. Freight rates ; ventilated and refrigerator chambers ; the dock accommodations for loading and unloading ; bills of lading.

3. Packages. Berry boxes ; baskets ; fruit boxes ; barrels ; crates and other packages ; uniformity in minimum, maximum or definite size.

4. Markets and marketing. Agents and commission men, domestic and foreign; direct sales and consignments; cooperation in selling; opening new markets; commercial agents abroad.

5. Adulteration of fruit products. Jams, jellies, canned fruit, fruit extracts.

6. Nurseries. Varieties and novelties ; diseases and pest inspection; responsibility of agents.

7. The Fruit Marks Act. Definition of No. 2.

8. The Dominion experimental farms and provincial experiment stations. On what new lines should the work be prosecuted ?

9. Horticultural education. Fruit conventions and institutes, orchard meetings, school gardens, agricultural college short courses.

10. Orchard practices, including varieties, planting, tillage, fertilizers, winter protection, pruning, thinning, spraying, orchard soil culture, picking, storing.

11. Fall fairs and fruit exhibitions generally. Prize list ; judging and judges, score cards ; displays.

12. The formation of a Canadian Pomological Society or Dominion Horticultural Society.

13. Horticultural publications.

14. Miscellaneous.

Items of Interest

Cases of deceitful packing have been cropping up lately at the Toronto market. In one case it is claimed a lady packer is responsible for the fraud. The apples on top of the package were beautiful specimens of Duchess, but underneath were scrub Greenings. Another similar case was found with a basket of peaches. Both cases were reported to the authorities and investigation is promised.

A freak of the horticultural world was noticed in an orchard near Enderby, B. C., in August. A bunch of freshly opened blossoms were found on the limb of an apple tree with fruit almost ripe on the same limb only a few inches away.

British Columbia fruit growers met the Tariff Commission at Nelson and urged that the duty on fruit be maintained and that the same strictness be kept with regard to inspection. The Winnipeg vendors had hoped to have the duty lowered, but British Columbia growers claim they can supply the whole northwest and have some left to ship to England. They said that duty might be taken off oranges, lemons, and such tropical fruits, but went so far as to advise a stiffening of the duty on apples.

THE FRUIT SHIPMENTS TO THE WEST

The trial shipments of fruit being made by the St. Catharines Cold Storage and Forwarding Co. are not, as some seem to suppose, being assisted by the Ontario government. Shipments made this year receive no aid and are the result of the enterprise and push of the company.

One year ago when the Government sent Prof. Reynolds to the Niagara district to secure two carloads of fruit to be forwarded to Winnipeg, the members and growers of the St. Catharines Cold Storage Co. volunteered to load a car and forward it on commission free of any expense to the Government, while Prof. Reynolds had to guarantee a fixed price for the bulk of the fruit sent in the other car. Owing to the guarantee this car cost the Government over one hundred dollars, while the St. Catharines car was sold at prices satisfactory to most of the shippers.

During the winter and early summer the growers at St. Catharines held several meetings and at last decided to arrange with some of the commission houses in Winnipeg to handle their fruit. A committee of four growers was named to assist the directors of the company to load two cars a week under the direction of the committee.

About 25 growers agreed to pack and ship their share, so that the cars would have enough fruit on the shipping days. Arrangements were made with The Ottawa Fruit Exchange, Winnipeg, to sell the fruit and to send statements to each shipper and also to send a copy of the whole to the storage company. A portion of each car was to be packed and put up in special packages, and the remainder in the regular shipping baskets. The committee has a copy of all details of the fruit and shippers in each car, giving the grade of fruit, ripeness and style of packing and packages used. To this will be attached the copy of sales and condition of car on arrival. Mr. Moore, Chief of Markets Division under the Dominion Government, has been placing thermographs in most of the cars, and the records of the temperatures during the trip will also be attached to the statements.

Good results are looked forward to from these records. At date of information 16 cars have gone forward. Shipments have increased to three cars per week, and two carloads have been sold to go as far west as Calgary, and other sales will follow.

Some of the results have been disappointing and others very satisfactory. The largest shippers appear to be sanguine that the venture will be very successful on the whole and that they will be able to locate the weak points which have caused low prices in some shipments and to some growers.

The railway commission induced the railway companies to give transportation to anyone the growers might choose to accompany a few cars to test the efficiency of the several makes of refrigerator cars. Inspector Carey, of the Fruit Division, was chosen to accompany the first, a G. T. R. refrigerator, on September 8, and Mr. A. D. Broderick accompanied the one sent on September 15. Mr. Broderick goes out solely in the interest of growers, receiving nothing for his expenses or time, but it is felt by the growers that the Ontario Fruit Growers' Association or the Ontario government should bear his expenses.

Later in the season ventilated cars will be tried. The sending to the west of such large quantities of fruit will help to stiffen prices here and prevent gluts and over-shipments to our own markets.

A report from The Ottawa Fruit and Produce Exchange, of Winnipeg, of the car which reached there September 20 states that the fruit was in great demand and sales made as follows: Pears, 12-quart basket 65 cents, trays 95 cents, and boxes $2.30 ; tomatoes, 40 to 50 cents ; peaches, 70 cents ; grapes, 30 to 43 cents. The report also says that the cars are arriving in much better condition than they did earlier in the season.

The Canadian Horticulturist is becoming an important publication and must be a great help to fruit growers and lovers of flowers.—(Mr. Thomas Kerfoot, Minesing, Ont.

Congratulations on the greatly improved condition of The Horticulturist. It is very noticeable.—(J. Thos. Murphy, Simcoe, Ont.

BULBS {Tulips, Hyacinths, Crocus, Narcissus, Snowdrops, Lilies, Etc.

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FRUIT AT THE CANADIAN NATIONAL EXHIBITION

The magnitude of the fruit display at the Toronto exhibition can be judged from the fact that apart from boxes, baskets and barrels over 2,000 plates were required to place the entries on the shelves. The entries were more numerous than in 1904, but that this is an off year in most fruits was shown by the quality and lack of color in most cases. It would be difficult to single out any one fruit that was particularly fine. Plums, perhaps, were the best, but many rotted on the plates. Peaches were plentiful, but noticeably immature. The same lack of development was characteristic of nearly all the fruits.

The surprising feature of the display was the show of pears. Reports from all sections quote that crop as being light to a failure. Despite this fact the entries were up to the average and the specimens good in most instances. The grape shelves were well filled, but very few of them were ripe enough to warrant the placing of the placard "please do not handle."

The reports which have been published in The Horticulturist stating that Ontario's greatest apple crop this season is to be found in eastern Ontario was borne out by the number of prizes awarded to the Dempsey's and other growers near Trenton. Several prizes, however, went to Hamilton growers and a few to St. Catharines. The interest taken in modern packing was evidenced by a greatly increased exhibit of boxes packed for export. In this class, also, the Trenton growers seem to be the most expert. Many prizes were awarded to Harry Dempsey, of Rednerville, both for packages and specimens on the shelves. For the ninth time in succession Mr. Dempsey has won the red ticket for collection of 40 varieties. The second prize for this collection went to Harry Marshall, of Hamilton, who also won numerous prizes for the different individual varieties on plates and first for collection of 20 varieties.

A valuable part of the apple exhibit was the collections of five varieties for export, five for dessert, and five for cooking. In the class for export Harry Marshall got first with Ribston Pippin, Baldwin, Rhode Island Greening, Northern Spy and King of Tompkins County. Frank Onderdonk, of Albury, secured second with King, Spy, Baldwin, Ben Davis and Golden Russet. For dessert apples the first went to Harry Marshall, who had Fameuse, Swazie Pomme Grise, Ribston Pippin, Gravenstein and Spy, while Harry Dempsey came next with Trenton, Ribston, McIntosh Red, Swazie and Fameuse. J. F. Dempsey, of Albury, secured first for cooking apples with Duchess, Spy, King, St. Lawrence and Rhode Island Greening. Second prize was awarded to H. Marshall for Duchess, Alexander, Cayuga Redstreak, Greening and Spy.

EDUCATIONAL FEATURES.

In former years the Fruit Experiment Stations have made exhibits of fruits, good, bad and indifferent. This year a change was made and only the best varieties were shown. A division was made to bring out three main classes: The best eating varieties, the best varieties for commercial purposes, and the varieties best adapted

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E. D. SMITH, Winona, Ont.

to colder sections. In the last class were such varieties as Duchess, Longfield, Sweet Bough, Swazie, Pewaukee, Wagner, King, Wealthy, Tolman Sweet, Greening and Spy. A mere glance over this exhibit enabled the anxious farmer to select varieties suited to his locality, and also most profitable for whatever purpose he intended growing. Another creditable feature for which the Ontario Department of Agriculture was responsible was the excellent display of insects and fungous diseases which worry the fruit grower. This fine exhibit was in charge of T. D. Jarvis, B. S. A., lecturer in entomology and zoology at the Ontario Agricultural College, and either Mr. Jarvis or Mr. Andrew Haynes, of St. Catharines, who has been assisting in the spraying experiments in the Niagara district during the summer, was present to answer questions and give information regarding the pests. Great interest was taken in the plates of fruit illustrating the value of spraying with the lime sulphur wash. Treated and untreated fruit were shown side by side. Specimens of fruit and branches of plums, pears and apples affected with San Jose scale were shown, along with such troublesome fungous diseases as apple scab, bitter rot, black and brown rots, pear scab, mildew of the grape, and other diseases which destroy the different fruits. The exhibit, also, contained a collection of injurious insects in the different stages. Beside these were specimens of leaf, twig, or fruit showing the work of these insects and diseases with the life history of each.

Microscopes were supplied so that the spores could be distinctly seen and the orchardist taught to identify them in his own orchard or garden. Small bottles contained samples of commonly used insecticides and fungicides, and beside them were the formulae for making the solutions. There were also in this instructive

Classified Advertisements

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WANTED — SUBSCRIPTION CANVASSERS for The Canadian Horticulturist both in cities and in the fruit districts of Canada. Liberal commissions offered. Good men soon put on salary. Write The Canadian Horticulturist, Rooms 507-508, Manning Chambers, Toronto, Ont.

FOR SALE CHEAP—ONE OF THE CLEANEST and best equipped greenhouses in Toronto. Everything in splendid condition, carnations planted, excellent stock of ferns and general stock of plants, 10,000 feet of glass. Apply at once to F. C., care of The Canadian Horticulturist.

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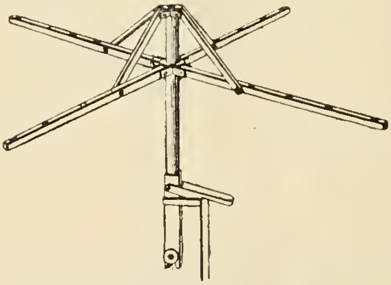
APPLE EXPORT FIRM—A YOUNG MAN AT present engaged in the fruit trade in England, speaking Danish, Swedish and German, is seeking engagement in Canada. RHB, The Horticulturist's Office.



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The use of a little care, and WINDSOR SALT, will improve your butter 100%.

Windsor SALT

is absolutely pure—disolves quickly—and is easiest to work. It makes the most delicious butter that readily brings the highest market price.

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collection weeds and weed seeds, common clovers and other leguminous crops which are used as cover crops, bottled to show the nitrogen-gathering nodules on the roots, and mounted specimens of three of the commonest bees which fertilize the red clover.

"The object of this exhibit," said Mr. Jarvis, "is to teach the farmer to know the insects and fungous diseases which cause him endless trouble, to show him the work done by each, and by use of the microscopes to arouse a deeper interest by showing him the forms described."

THE PRIZE WINNERS.

Lack of space prevents the publication of the prize winners in detail. In peaches the prize winners were: Messrs. E. Freel, Niagara-on-the-Lake; Gordon Bunting, St. Catharines; Robt. Cameron, Homer: Stanley Prest, Stamford; Alex. Glass and A. D. Broderick, St. Catharines. Awards for grapes went to F. G. Stewart, Homer; Lewis Haynes, S. D. Furminger, J. H. Smith and A. D. Broderick, St. Catharines; H. P. Secord and Wm. G. Selby, Homer, and Stanley Prest. For grapes grown under glass John Chambers, Toronto, and F. R. Merritt divided the honors. S. D. Furminger, Harry Marshall and G. Bunting had the best quinces. The prizes in the different sections for pears were awarded to Geo. H. Wild and Harry Marshall, Hamilton; W. M. Robson, Lindsay; Harry Dempsey, Rednerville; S. D. Furminger, A. D. Broderick, J. H. Smith, G. Bunting, C. Riordan and Alex. Glass, St. Catharines; Thos. Delworth, Weston, and Robt. Cameron, Homer. The prize plums were owned by

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Seed Merchants——Established 1850

Messrs. Marshall, Cameron, Bunting, Glass, Furminger and Stewart.

Among those who were awarded prizes for apples were Harry Dempsey, Rednerville; Harry Marshall, Hamilton; Frank Onderdonk, J. F. Dempsey and S. Pem Peck, Albury; James B. Guthrey, Dixie; W. M. Robson, Lindsay; Mrs. Boyd Burk, Brougham; Dr. Foster, Oakville; Norman Brown and Edwy Brown, Eglinton; R. Houston, Dixie, and Alex. Glass, St. Catharines. For packages J. F. Dempsey got first and Frank Onderdonk second for one barrel for export, while the prizes for apples in boxes were divided among Harry Dempsey, J. F. Dempsey, Frank Onderdonk and Gordon Bunting.

First prize for best display of fruits went to St. Catharines Horticultural Society, while the South Fruit Growers' Association, of St. Catharines, got second. A. D. Broderick won first and G. Bunting second for fruit decorative centre piece.

The Tomato Situation

The weather around Hamilton for the past four weeks has been most favorable for the tomato crop, but notwithstanding this the late varieties are a short crop and most of the supply received by the canners has been early varieties. In former years, when canners accepted these, the growers were generally docked a number of bushels on each delivery, but this year they were very glad to receive them without resorting to this imposition. The price paid for late tomatoes on the Hamilton market during this season has ranged from 35 to 50 cents per bushel. From this a good idea of the scarcity may be gained. On account of the refusal of the canners to pay 30 cents on straight contracts a number of the growers have shipped almost their entire crop to outside points.—(E. J. Mahoney, Hamilton.

AROUND ST. CATHARINES.

The favorable weather has brought the tomatoes around rapidly, and this week all the factories have been busy. Prices remain the same except that a few of the surplus tomatoes have, I believe, been sold for 25 cents.—(W. C. McCalla, St. Catharines.

PRINCE EDWARD COUNTY.

The tomato fields are doing well owing to excellent weather. Factories are running full capacity.—(John W. Hyatt, Westlake.

Improved Service

Now that the service for the exportation of apples and other green fruits is about to commence, the question of facilities furnished by the steamship lines from Montreal is of vital importance to exporters of these commodities. The improved service and equipment installed on the vessels sailing from the port of Montreal in recent years are largely responsible for the increasing demand for Canadian fruit, which can now be landed in Great Britain in first-class condition. The progressive spirit of the managers of the steamship lines has this season inaugurated a steamship service far in advance of anything that has been done heretofore. It

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Montreal and London Service

S. S. Devona, cold storage and cool air, Oct. 7th
S. S. Hurona, cold storage and cool air, " 14th
S. S. Fremona, fan ventilation only, " 21st
S. S. Cervona, cold storage and cool air, " 28th
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Direct service to Newcastle, Leith and Aberdeen. Sailing cards will be furnished on application.

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S. S. Lakonia, cold storage and fan ventilation, Oct. 5th
S. S. Salacia, fan ventilation, - - - - " 12th
S. S. Kastalia, cold storage and fan ventilation, " 19th
S. S. Tritonia, fan ventilation, - - - - " 26th
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is needless to mention the record beaters placed in the Liverpool service by the Allans this season, as a perusal of the daily papers from week to week clearly shows that there is nothing on the Atlantic that is superior to this service either for freight or passengers.

On the Glasgow service of the Allan Line such vessels as the Ionian, Mongolian, Pretorian, Sicilian and Corinthian speak for themselves. These vessels make the passage from Montreal to Glasgow in eight to 10 days and are equipped with the latest system of refrigerator and ventilated compartments for the carriage of perishable freight. The loading and unloading is not done by the ordinary stevedores, but by special and experienced men employed exclusively by the Allan Line for this purpose, thereby ensuring the best results. The vessels of this line sail regularly from Montreal every Thursday throughout the season of St. Lawrence navigation, so that the shipper may time his freight accordingly and be sure that it has been forwarded on the steamer for which it was intended. Exporters of fruits would do well to get into communication with Messrs. H. and A. Allan or their representatives, who will be pleased to furnish all information required.

Process Showing at the Fairs

A feature which is coming into vogue at the agricultural exhibitions is the exhibition of the process of manufacture of various articles. Where the article shown is one of common use, the process of making it is always of great interest. At Toronto the process building was always crowded. At the Western Fair at London the Waggoner Ladder Company set up a bench and one of their workmen, with his appliances, worked away as if in the factory for several days of the fair, putting in the steel wire reinforcement which is one of the advantages of the Waggoner Extension Ladder. A very much interested crowd stood around the place the whole time, and the result was—several times larger sales than the company ever made at the fair before.

Showing the process produces interest, and if it illustrates a really good thing the man who sees it is convinced. At the West Middlesex fair, at Strathroy, the company showed the process again with similar results. There is a general feeling on the part of the managers of these fairs that it will pay to encourage these process showings and keep out the "midway" shows, which have for some time been discrediting our fairs.

Spraying Machines at Toronto

One of the most interesting exhibits at the Toronto National Exhibition for the fruit growers was the Little Giant Sprayers, shown by the Perkins & Paine Co., of Port Dover, Ont. As they were the only power sprayers on the grounds these machines attracted much attention. Besides being the cheapest machine on the market, it is also the only one that automatically sprays two rows of grapes or small fruits at the same time.

Many United States fruit growers expressed themselves as being highly pleased with the

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describes the above and many other other kinds. **It tells how to plant**, when to plant, where to plant, and what to plant.

PAEONIES, HARDY PHLOX, CRIMSON RAMBLER AND HARDY HYBRID ROSES, ORNAMENTAL AND FLOWERING SHRUBS.

CATALOGUE ON APPLICATION.

J. GAMMAGE & SONS, = London, Ont.

machines and as being anxious to have them manufactured in the States. The firm was offered a large amount for the right to manufacture these machines across the border. Mr. Perkins stated that they have booked enough orders this fall to keep their factories working full time all winter. These machines are now in perfect working order, having long since passed the experimental stage. Fruit growers may feel assured that they are obtaining the best when they purchase a Little Giant Sprayer.

Loading and Stowage of Apples on Steamers

One of the most important points about safe carriage of apples to Europe is the loading and stowage on the vessel. The Donaldson Line to Glasgow has a most enviable record in this respect, and shippers will do well to look into this feature when asking for space.

The refrigeration and fan ventilation of the steamers on this line is almost perfect, and inspection of them is invited. Another feature of this line is that the vessels take a north Atlantic course, thus giving the apples the benefit of the coolest sea voyage, so that with proper loading and stowage fruit on this route, especially during the early part of the season, should arrive in first-class condition. (See advertisement.

A Useful Novelty for Everyone

Stone and Wellington have pleasure in offering to their patrons and the general public another new novelty in the shape of the handy saw. This is a steel saw, not only useful for trimming trees, but for cutting iron or other hard metals. Will cut through bolts, nails or any iron metal without injuring, and with perfect ease. It is handy for the farmer, fruit grower, and townsman. By taking large quantities we are enabled to offer them at 50 cents each, or they can be obtained through any of our reliable agents for the same money.

Little Giant Sprayer.—In a recent issue of The Horticulturist there was published an advertisement, including a photograph of a Spramotor outfit, under which it was stated that the illustration showed one of these machines being operated on the premises of Mr. E. D. Smith, of Winona. This was an error on the part of the printer, as it should have read Mr. E. M. Smith, of Winona. Messrs. Perkins & Paine, of Port Dover, the manufacturers of the Little Giant Sprayer, inform us that Mr. E. D. Smith, of Winona, is using one of their sprayers and that he does not possess one of the Spramotor machines.

Write For It.—A valuable and beautifully illustrated catalogue has been sent out by the Steele, Briggs Seed Co., Limited, of Toronto, who also have branches at Hamilton and Winnipeg. Special mention is made of bulbs and house plants for winter decoration. The growing of bulbs is claimed to be simple, and this progressive firm offers a pamphlet on "Bulbs and How to Grow Them" free.

MONEY EASILY MADE BY OUR READERS

$10.00 will be given away free by The Canadian Horticulturist to readers who purchase goods from it's advertisers. All you have to do is to tell the advertisers you read their advertisments in The Horticulturist

HOW TO OBTAIN THE MONEY

$5 will be given to the person who buys goods to the greatest value from advertisers in this issue before October 30, 1905.

$5 will be distributed, one dollar to each, among the next five persons making application, who have purchased goods from our advertisers.

We have secured a limited number of an up-to-date work "The Orchard and Fruit Garden," recently published by E. P. Powell, one of the best known authorities on this continent. It contains 320 pages, and is well illustrated. We will give one of these books to any of our readers who would prefer it to one of the one dollar prizes. This book retails at $1.50.

Readers must tell the advertisers they saw their advertisements in The Horticulturist.

A valuable premium will be given to all who do not win cash prizes. A premium will thus be given to everybody who buys something from advertisers in The Horticulturist.

When applying for a prize readers must inform this office of the name or names of the advertisers they purchased from and the value of their purchases. Application for this bonus must be made before November 15, 1905. Address

ADVERTISING MANAGER,
The Canadian Horticulturist, - Toronto, Ont.

The Belleville Nurseries

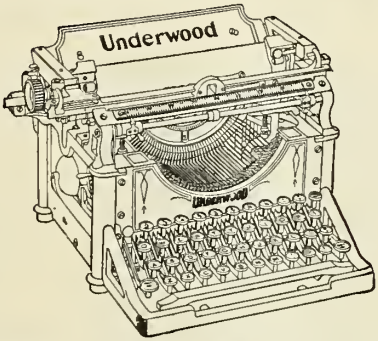
for hardy varieties of

Fruit and Ornamental Trees, Shrubs, Vines and Evergreens

guaranteed true to name.

Special prices on Norway Spruce, 3 to 5 feet, good stocky trees, and several varieties of the best Winter Apple, good healthy trees, ¾ in. and up, grade, 6 to 7 feet high. Send list of wants for prices before placing your order.

W. C. REID, BELLEVILLE, ONT.



THE UNDERWOOD

"Tried and True". Don't take our word for it. We are prejudiced. We can show you the **Underwood**, how it works and what it will do, but for the **Most Convincing Argument**, you will have to ask any of the 5500 users in **Canada**.

More **Underwood Typewriters** are in use in **Canada** than all other makes **Combined.**

We carry a large stock of rebuilt typewriters at very low prices. Send for Catalogue and List.

Headquarters for Supplies.

UNITED TYPEWRITER CO., Limited
TORONTO, ONT.

Protect Your Trees From Mice!!

Something New! Consisting only of a Veneer wrapping—

SIMPLE
QUICKLY APPLIED
EFFECTIVE
CHEAP

Try it and be convinced. We are in position to supply any quantity or size of Veneer for this purpose, compactly crated.

In ordering give size.

Keenan Woodenware Mfg. Co.
LIMITED

Manufacturers of Woodenware of all kinds, Fruit Baskets, Meat Packers' Baskets, Veneers, etc.

Owen Sound, Ontario

Free **Green Mountain, Mc Pike, Campbells' Early** **Free**

The varieties named above are three of the best Grapes of recent introduction. We will send a first-class, 2 year, strong, well rooted vine of one of them to any person who will send us the names and P. O. address of ten reliable men among whom we would be likely to engage a canvassing agent.

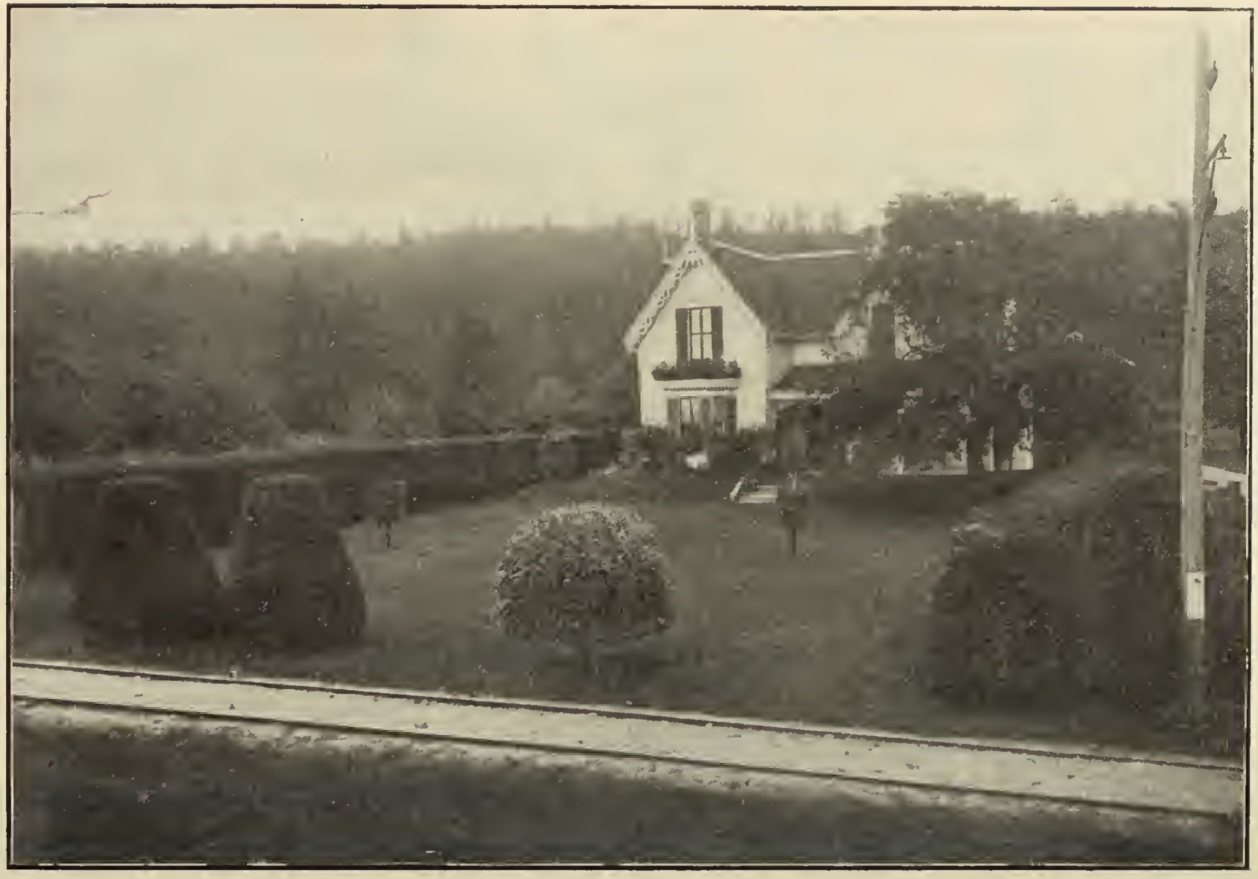
We want names of persons who have had previous experience as canvassers for books, pictures, agricultural implements, etc., or of any others whom you think would succeed as agents for us.

Your name will not be mentioned to those to whom you refer us, and no responsibility will attach to you in any way.

The Grape Vine will be sent to you, free of any expense, and if this were not a bone-fide offer we would not be permitted to print it here.

A post card and a few minutes' time are all that are needed from you. Address us as below, and write names plainly, **and be sure to give us your own name and Post Office.**

Brown Brothers Company, Nurserymen
LIMITED
BROWN'S NURSERIES, ONTARIO



The Home of a Fruit Grower in the Niagara District.

One of the most enjoyable features of a trip on the electric car line which runs from Hamilton, through one of the principal sections of the far famed Niagara District, is afforded by the glimpses that may be had of the comfortable homes of the fruit growers. A number of these homes are almost mansions, while practically all present a most attracitve appearance. The illustration shows the home of Mr. J. W. Smith, of Winona, one of the leading growers. The manner in which certain parts of the country are being opened up by car lines, is here shown, the tracks in the illustration being those of the electric car line which runs through the district and which has been a great boom to the fruit growers.

The Canadian Horticulturist

NOVEMBER, 1905

VOLUME XXVIII ❖ NUMBER 11

METHODS OF SELLING FRUIT

A. E. SHERRINGTON, WALKERTON, ONT.

AFTER visiting all of the principal fruit markets in England and Scotland, I am more convinced than ever that cooperation among the growers and shippers of Canada and other countries is an absolute necessity if the growers are to retain that market and receive a share of the profits on the products of the orchard. I saw some dickering in Great Britain last summer that could scarcely be called square dealing, in fact, it was anything but square. Who was the loser in this particular transaction? No one but the shipper. The commission merchant had his commission and was at no loss. The time is coming when our fruit and other produce will be sold F.O.B. here, instead of by consignment.

Retail merchants I saw expressed themselves as very much pleased with our method of cooperation in packing apples, and agreed that all products should be sold direct, and not handled on commission.

I interviewed several retail fruiters in regard to shipping apples in boxes. A number of them had had no experience with boxes, but said they were willing to give them a trial, believing that they would be very convenient for their trade. Others who had handled apples in boxes were perfectly satisfied that it is the right package for the finer sorts.

During the short time that I was in Europe I had no difficulty in arranging with reliable parties to take all their requirements from our cooperative association F. O. B. here. If the right kind of man was over there one season he would be able to place nearly all the apples grown in Ontario by straight sales to reliable parties. It does not pay to send anything to Europe but first-class goods. When good fruit was offered the buyers vied with each other in bidding, but when the goods were inferior bidding was slow.

It is a great mistake to mark the barrels wrongly. I saw some apples on Covent Garden market, London, put up at Colborn, Ont., marked XXX Duchess. I opened some of the barrels and found one marked XXX Duchess which had not a Duchess in the barrel. They were green apples without a particle of color. Another barrel contained Duchess, but only number two, and marked XXX. This kind of packing will not do. It can be prevented cooperation in packing.

The need for greater cooperation on the part of Canadian growers becomes more apparent every year. Cooperation will mean better packing and higher prices and will strengthen the fruit industry in all its branches. Wherever it has been given an honest trial in Ontario it has been a great success. The more of these associations we can have the better for the growers of the province.

COOPERATIVE WORK IN ONTARIO

THE rapid increase in the number of fruit growers' cooperative associations is one of the most encouraging signs of progress in the development of the fruit industry in Ontario. The success of the St. Catharines, Walkerton, Chatham and Forest associations has done much to educate the growers of the province in regard to the value of cooperation in the handling of fruit. Not only have these associations had a successful season this year, but success has also attended the efforts of the two new associations at Oakville and Thornbury.

The Oakville Fruit Growers, Limited, was the name adopted for the company organized last spring by some 40 growers in the vicinity of Oakville. A few days ago a representative of The Horticulturist visited this plant and was greatly impressed by the large amount of business being done.

The building, in which the fruit is packed, is a temporary structure, 50 x 80 feet long, located on Mr. Inglehart's property near the railroad. The fruit is received at one end of this building. There is a passage way down the centre, on each side of which are bins in which the fruit of the members is stored as rapidly as it is received. On each side of this passage, at the opposite end of the building from which the fruit is received, there are two large spaces. In one of these the fruit is graded and packed. The culls are dropped through a chute to the basement. As soon as the apples are packed the barrels are rolled across to the space on the opposite side of the passage, where they are kept until taken to the station. The culls are sent to the evaporator. A careful record is kept of the amount of fruit sent by each man, and of the number of barrels of first and second grade fruit, and of culls, it grades into.

"Our first season," said Mr. Walter A. Inglehart, the manager, "is going to prove a most successful one. At the beginning of the year we expected to handle some 4,000 barrels, but we are going to handle about 7,000. We have some 40 growers in our company, and at the outset placed our shares at $10 each, on which we have called up 25 per cent. The fruit of our members is picked by them, and all the fruit, including the culls, is brought direct to the packing house. We only handle apples.

"We have been paying $1 a barrel for all fruit packed during the week. The balance is kept for working capital, and the surplus will be divided at the end of the season. We do not pay dividends, as everything goes back to the growers. All our stock has been subscribed. The prices we have

Part of the Stock at Oakville Waiting for the Graders obtained are higher than most of the growers in this section, who are not members of our association, have been able to secure for their fruit. I look after all the grading and packing and the sale of the fruit, in return for which I am paid a regular salary.

Packing Apples at the Oakville Fruit Growers, Limited

" We made a considerable saving on our supplies at the beginning of the season by purchasing in bulk. We bought the stock and contracted with a cooperage firm to make the barrels. They have cost us an average of 35c. In this way we have saved at least two cents a barrel, or $140 on this item alone. In order that we might work at night during the busy season we have had the building equipped with electric lights, and in this way are able to get through out work more expeditiously.

" So far the venture has been a perfect success. Our growers have been delighted with the results obtained. Some buyers have been offering our members inducements to leave the company and to sell their fruit independently, but as yet only one grower has done so. Every member of the company had to sign a statement at the beginning of the season agreeing to sell all his fruit to the company, and with the exception of the one man referred to they have all done so.

" Some idea of the amount of the work we do in a day can be gained from the fact that we have been sending as much as two tons of fruit a day to the evaporator. During a great deal of the time I have to keep 10 to 12 assistants at work, who are employed by the month. In addition to the packing house we have a storehouse which will hold 2,000 barrels. Two teams are kept going all the time taking the fruit from the packing house to the station and storehouse and looking after other work."

" Have any of the growers complained of the manner in which their fruit has been packed?" was asked.

" No," replied Mr. Inglehart, " they all seem well satisfied. I have had experience as a buyer of fruit, and they seem to have confidence in my packing. One thing I have noticed is the great difference in the quality of the fruit sent in by the different growers. The fruit of some growers grades 50 per cent. firsts, while that of other grades 50 per cent. culls. Considerable fruit has been injured by the codling moth, but there has been little trouble from fungi. To keep everything straight I have found it necessary to balance all the stock on hand and the fruit shipped during the week every Saturday night. In this way we keep careful track of the amount of fruit sent in by each grower, when it was packed, when shipped, and all other information concerning it.

"The great bulk of our fruit has been purchased by British importers, and will be shipped to three or four different firms. In this way we will save the commission of the middlemen who have generally bought the fruit of our members. We have adopted the Oak Leaf brand, and all our boxes are marked with a stencil. In this way we hope to establish a demand for our fruit which next year will help us dispose of our supply.

WHAT THE GROWERS SAY.

Several growers in the Oakville district who have contracted with the Oakville Fruit Growers, Limited, were interviewed by The Horticulturist and all seemed well satisfied with the outlook for good returns for this season's crop.

"Selling to the company," said Mr. F. G. McCraney, "is the only way. Selling to buyers is always more or less unsatisfactory. The buyer looks over an orchard and then makes an offer, grading firsts and seconds to suit himself. If the fruit turns out well he takes nearly all, but if it is not good and the Old Country market is dull, only a few are taken and the bulk of the crop is left on the grower's hands. The buyer makes the grade and practically fixes the price as well. He will never make a contract in writing, so that there is nothing to compel him to take the fruit.

At Oakville—Eighty-Five Boxes Ready for the Car

"When selling to the company all the fruit is brought in, and Mr. Inglehart and his men do the grading and packing, while the managing committee attends to the selling. I have every confidence in this method, and if rightly managed it should prove more satisfactory to the grower than the old way. It is a new departure in this section, but something must be done to make the apple industry pay better, and I intend to stand by the company. There should be one in every neighborhood."

A BETTER SYSTEM.

"This method is far superior to the old way," remarked Mr. Alex. Belyea. "When sales are made to the buyers the apples are picked and left in heaps under the trees. Sometimes the buyer does not come for days, and often weeks, and the fruit lies there exposed to weather, mice and insects. The top layer of some varieties is damaged by the sun, and the mice and insects destroy many.

"When contracts are made with the company there is no waste. The fruit is put directly into barrels and taken to the packing house. There, uniform grading and packing is done and the Old Country buyer sees that he can get larger quantities and a more uniform grade, and pays a better price.

PRINCE EDWARD ISLAND'S POOR APPLE CROP

REV. FATHER A. E. BURKE, ALBERTON, P. E. I.

SELDOM or never has a more bounteous crop been garnered into the barns in Prince Edward Island than this year. The fruit crop, however, is not abundant, and, grateful as we are for small favors, there is no ground for exuberance on this count.

Last year, when all the world enjoyed a full measure of apples, ours was fairly good too, but the conditions of the fruit market gave only moderate returns for the orchardist's toil. It was a very dry season—five months of complete drought, where rain is required every week for best results. The trees bloomed profusely, and, though they bore a fair crop, strange changes in the size, color and quality of the fruit were noticeable. Owing to the extreme drought the Ben Davis apples had become ripe enough for eating by October, whereas, ordinarily, they are not so mellow until the following June. The same changes were common to all the winter varieties. The general result was only a medium return from the orchards, and, naturally, fruit growers expected an average crop for 1905.

Why, then, are we so stinted in the apple production? The trees bloomed; there were no frosts at the time to kill the blossom; the protection, defective enough, it is true, was no worse than usual. There must be some other reason for this dearth of fruit. Here is the explanation. The trees passing through such a drying-out period in 1904 were engaged in a life and death struggle. They were able to fix fruit buds but had not sufficient strength to vitalize them thoroughly. These buds were sufficient to produce blossom but not strong enough to fix fruit. This year's famine, therefore, is due to last year's drought. Nay, more. In many cases the trees themselves were unable to store up sufficient nourishment to hibernate, and hence the many mysterious cases of what is called "blasting," resulting in partial or complete destruction of the tree.

THE REMEDY.

The natural question is, could these misfortunes not be avoided? Might such conditions not militate against the Island as a fruit country? No easier task could be set than the conservation of our apple areas. The trouble is, the orchards are not sufficiently fertilized. With water, the soil will give crops every season. In dry seasons they grow where there is sufficient humus in the soil. If the orchards had been well fertilized, they should have been able to produce vital fruit buds for this season. In fact, some of the well cared orchards did do so. Protection must be found in this exposed province every year and sufficient fertilizers must also be added if prime fruit is to be grown and money made.

The far famed Annapolis Valley, too, is comparatively bare of fruit. A study of conditions there and a comparison of the situation and soil with Prince Edward Island shows that they have an advantage in shelter. The valley is completely protected by a fringe of hills. On the island the protecting forest has been shamefully cut down until artificial windbreaks have to be depended on.

Despite untoward circumstances, Prince Edward Island fruit at the Charlottetown show excelled the exhibits at Halifax and

Frederickton. The judge, Major Sheppard, of Queenston Heights, said that Island fruit was easily superior to that from the other provinces. With normal conditions the quality of fruit grown here is unexcelled. The soil of the Annapolis Valley is not equal to that of the Island. With as much manure added as is used in the valley just as abundant crops will be produced. Prince Edward Island should be the best apple producing region in Canada—aye, in the world—but the growers have not learned enough about the business to bring the best results.

PROTECTION FROM MICE

IN Bulletin No. 144, Ontario Agricultural College, Guelph, Professor Hutt, in dealing with the damage done to fruit trees by mice in the winter, says that the rapid increase in numbers is due largely to the indiscriminate destruction of the farmer's best friends, the hawk and the owl. The hawks feed largely on mice by day and the owls take up the work by night. These birds should be protected so that the equilibrium of nature may be restored. Mice seldom harbor in a green crop and never on clean fields. They are found along old fence bottoms and in meadows. As there is usually some shelter for the mice near orchards it is advisable to guard against their depredations. In localities where snow falls early and remains on the ground all winter the simplest and cheapest preventive is to tramp the snow firmly around the base of each tree early in the winter. A mound of earth is also said to be effective in diverting the runways of the mice from the tree. Building paper or tar paper is frequently tied around the trunk and is recommended as cheap and effective.

The remedy recommended by Prof. Macoun, and practised at the Experimental Farm at Ottawa, is the use of veneer around the trunk. This veneer is cut six to 10 inches wide and 18 inches long from elm or other cheap wood.

Different methods are adopted by leading orchardists. " I use tar paper for all my orchards, both young and old," writes Mr. A. H. Brooks, of Dixie. " I have practised this method for three years and have lost only one tree in that time. That tree was girdled above the paper. Four years ago I banked with earth and lost 38 trees. These trees were all on the outside row near an old fence. I have taken away the fence, plowed the grassy bottom and put a wire fence in its place. By keeping the grass away from fence bottoms and practising clean cultivation, no lodging places are left for the mice. I have tried tramping the snow around the trees but always suffered considerable loss until I used the tar paper.

" I tie the paper around with binder twine very loosely so that when the trees swell the bark is not injured. In a year the twine will have become so weak that the tree readily breaks it as it grows. If tied tightly the bark will be injured if the string is not cut in the spring. One man and an assistant to carry the string and help in other ways can go over a 12-acre orchard in a day."

" In a sod orchard," said Mr. Jos. Tweddle, of Fruitland, to The Horticulturist recently, " mice are very troublesome. I dig the sod away about 10 inches around the tree and bank up 10 inches above the level of the ground with earth taken from another hole, burying the sods in this hole so that the mice will not find a convenient harbor. This is practically complete protection. Tar paper is more trouble, but is effective if banked around the bottom and extended at least one foot above the surface of the ground."

METHODS OF A SUCCESSFUL GROWER

ALTHOUGH apples are a light crop in most sections of Ontario, orchards can be found in favored locations with somewhat abnormal crops. One of the finest orchards seen this fall by The Horticulturist is owned by Mr. W. G. Watson, near Dixie. It is situated on a light loam which is moist during the summer if well cultivated, and is protected from the sweeping winds by bush.

The bearing orchard was set out at three different plantings. The oldest trees are 26 years old and the youngest 18. About half the trees bear one year and the other half the following season.

"There is not a tree," remarked Mr. Watson, "that should bear this year that has not got a large load. The Alexanders, Snows, Russets and Spys never had a better crop."

There are 12 acres in bearing, and Mr. Watson placed this year's crop at 1,200 barrels, but if the unharvested trees exceed this amount as much in proportion as those already picked the total will be nearer 1,600 barrels. For quantity and quality the fruit is hard to beat. Northern Spy trees only 18 years old were heavily loaded with large clean specimens, while Russets of the same age had almost more than the branches could support. Buyers had visited the orchard who said it was one of the best they had seen, and several made tempting offers, but Mr. Watson has sold direct to the Toronto retailers since he started 26 years ago and preferred to do the same this season. He realizes that there is more work, but does not believe in letting the commission men take a share of the profit. Six trips a week are made to Toronto, and in case of a special rush two can be made in a day.

These 26 years in the fruit business have taught Mr. Watson that to make the most out of his crop the fruit must be graded. "There are a few things in connection with raising the crop which an orchardist ought to know," remarked Mr. Watson, "but he must also know when and how to market the crop to make the most out of it. I always grade the fruit, selling the lower grades for what they are worth. A bushel of culls in 10, spoils the sale of the whole lot. The retailer will pay only low grade prices if he sees a few small apples in a box."

The picking is done as soon as the apples pull freely, because if left a few days half of them would be on the ground. Fallen apples are not wanted. The varieties come in one after the other, keeping the pickers busy from the time the earliest harvest apples are ready until the late winter apples are stored. Up to the first week in October nearly 600 barrels had been taken to Toronto.

Picking Fruit in Mr. Watson's Orchard

The picking is done from ladders. Two men start at one tree at the same point and work in opposite directions until they meet. Each picker is supplied with a round bottomed basket, holding about a half bushel, which has a hook fastened to the handle. Low handles are preferred because it is necessary to get the basket to the bottom of the barrel to prevent bruising when emptying. Each picker empties his own basket.

Apples which will be marketed before heavy frosts come are left in the packing house. Those which will be sold before the middle of January are stored in an old dwelling house. In case frosts come a stove is in readiness. The winter varieties, which keep best, are stored in a large cellar under the house free from frosts.

"The apple store room," said Mr. Watson, "should be kept a little damp or the fruit will wilt. I prefer cement floors. Now and again I throw a pail or two of water in to keep moisture in the air. Russets should be well stored at once or they shrivel up. I never put apples in a pile on the ground as it makes extra work.

"With colored varieties it is best to leave them on the tree until a few fall, so that they will develop color. Apples will yellow after being pulled, but they will not redden. The bulk of our picking, however, is done before they commence to fall. I hate to see apples going to waste. All that are not fit for market are fed to the pigs, and special care is taken not to drive over any in the orchard. Most of the picking is done in the afternoon and late in the evening when the dew has gone. In the morning the trucking around is attended to."

EVAPORATING APPLES

THE question of obtaining some returns from the unsaleable part of the apple crop is important to every orchardist. In many orchards a considerable portion of the crop is lost each year which might be turned into ready cash or at least fed to stock. When the crop is heavy and prices are low this waste is especially great.

Large quantities are dried in some sections. Evaporators this fall are paying 25 cents a hundred for culls. Many farmers do this drying on a small scale. A few bags are carried into the kitchen in the evening and the family, and, perhaps, a few of the neighbors, do the work. One manipulates the peeling machine while others get around the table and quarter and core the apples. The smaller members of the family put the quarters on strings and hang them over the kitchen fire to dry. In some sections the stringing is dispensed with and instead the apples are placed on a screen and set outside on a scaffold in the sun to dry.

In the principal apple growing sections this drying is done on a large scale and growers who have great quantities of culls dispose of them to advantage by contracts with some of these evaporators. When the supply is great prices run as low as 10 cents a hundred, but 25 cents is not unusual for some of the most suitable varieties. The line of work in large evaporators was outlined to The Horticulturist recently by Mr. E. Roblin, of Carlton street, Toronto.

"When apple drying is done on a large scale," said Mr. Roblin, "kilns in which 400 bushels or more can be done in a day are used. As a general rule only culls are used but if the good apples are evaporated the finished product is of much better quality and considerably more can be obtained from 100 pounds of apples. For this work the apples should be well ripened on the tree. Russets and Baldwins are the choicest varieties for evaporation. If properly worked they give about 16 pounds from 100 of apples. Snows are very inferior. They are too juicy and yield only nine or 10 pounds from 100. They are never used unless other varieties cannot be procured.

"In a factory running 400 bushels a day, 30 girls are required to do the work. Eight machines peel and core 50 bushels each in a day and these can be dried in one kiln. The girls trim off anything the peelers leave and from the trimming table the apples are sent in bushel boxes to the bleacher, where they are subjected to strong brimstone fumes. This treatment makes them soft for slicing and prevents discoloration during the process of drying.

"Then the fruit goes to the slicing machine and is cut into rings. These slices are spread four or five inches deep on the kiln, and the evaporation is completed in 10 to 20 hours, depending on the depth. They must be well turned two or three times. When dried they are put in a heap in the curing room, where they are left for two or three days, after which they are turned and aired by being thrown from one corner to another and allowed to 'sweat out.' After seven to 10 days they are ready for packing. For shipment, two sizes of boxes are used—one holding 25 pounds, and a smaller and more common one weighing 15 pounds. After being packed, ordinary storage suffices. Frost does no harm and dampness makes them heavier. Too much heat makes them lighter unless they are packed when wet, in which case they sour and become like vinegar.

NOTHING WASTED.

"Nothing is allowed to go to waste. The peelings and cores are dried by the same process and packed tightly in barrels. This product is shipped to Germany and France, where it is made into jams, etc. Apples which are imperfect and too small for peeling are chopped and dried by similar process and packed, 275 pounds in a barrel. This barreled product is sent to France, and when grapes are scarce it is used in making some of the strong beverages. The champagne which reaches the Canadian consumer at $3 a bottle is made by this by-product from the evaporator."

FRUIT DEVELOPMENT IN BRITISH COLUMBIA

M. S. MIDDLETON, VERNON, B. C.

IN the early eighties a few experiments were made to test the adaptability of the then practically unsettled Okanagan valley for the growing of fruit. These were in the form of small fruit gardens, but clearly showed to such men as Lord Aberdeen at Vernon, G. W. Sterling at Kelowna, and a few others, the great industry which lay undeveloped in the fertile valleys lying between the picturesque hills of the Okanagan. These men began setting out large commercial orchards and the breaking down of several of the larger ranches into small fruit lots encouraged easterners and old country people to settle and take up fruit growing. From that time progressive strides have been made along horticultural lines. About 60,000 young trees were added this year to the many thousands which had been planted during recent years. These trees consisted chiefly of apples, pears, plums, cherries and peaches. Besides, some set out a few of the smaller fruits. The leading fruit, however, is the apple, which, roughly speaking, occupies about one-half of the fruit area, while the other fruits are about equally divided.

Up to three or four years ago the fruit development of the valley was practically in an experimental stage. A great number of the varieties planted as the most suitable for that section proved unsatisfactory. They developed and bore heavily, but, as varieties, were not suited to the market requirements. The more recent planters, having profited by the mistakes of the pioneers, are planting fewer varieties of more desirable qualities and now claim to have reached the commercial stage.

The principal tested commercial varieties might be summed up as follows: Apples—Gravenstein, Wealthy, Fameuse, King and McIntosh Red as fall and early winter varieties; Canada Baldwin, Spy, Winesap, Hubbardston, Nonesuch, Jonathan, Spitzenburg, Yellow Newtown Pippin and Cox's Orange as winter varieties. The last three varieties are highly recommended, but have not yet been well tried. Pears—Bartlett, Howell, Flemish Beauty and Buerre de Anjou.

Imperial Gage, Columbian, Bradshaw, Yellow Egg and Pond's Seedling are among the popular varieties of plums planted, while the Italian prune is a great favorite in the prune line. In the peach area the Crawford gives greatest satisfaction. It is a greatly disputed question as to what are the best varieties to plant. The best growers, however, advocate a comparatively few number of varieties. Three or four, or at most five, are enough. Then those interested in the fruit industry of the Okanagan valley can direct all their efforts towards making these varieties prominent and in a few years win a proud name for this valley whose fruit industry is yet only in its infancy.

COLD STORAGE FOR ONTARIO FRUITS

PROF. J. B. REYNOLDS, O. A. C., GUELPH, ONT.

THE question of cold storage in relation to the fruit industry is very important. Both the warehousing and transportation are of immense consequence to the fruit grower. There are in Ontario, as well as in the other provinces in Canada, many cold storage warehouses which are not patronized by the fruit growers as they should be. These warehouses, if patronized, would enable the grower to refuse low prices for his apples and other fruits, and to hold them for better prices next week, or next month, or next year. It usually happens with the enterprising fruit grower who takes advantage of storage facilities that the cost of storage is paid many times over by the difference between autumn and spring prices.

The actual effect of cold storage on produce is to delay the process of ripening in the first place, and retard decay after maturity. For instance, if a peach is to be shipped to a distant point, it must be picked from the tree in advance of dead ripeness, cooled as quickly as possible to 40 degrees F. or preferably as low as 31 degrees F., and held at the low temperature until it reaches the market. That peach, if left on the tree a day longer, might have been dead ripe, and in the course of nature after ripeness is reached decay sets in, and in a warm atmosphere proceeds very rapidly. But the amount of ripening that takes place in one day on the tree would require four to five days, or more, in cold storage, during which time the fruit is being carried to market. Then the molds, fungi, and bacteria that cause decay work very slowly at low temperatures. At the same time, if that hypothetical peach is picked before it has attained full size and some color, it will never attain the same quality in storage as it would have done if left longer on the tree. For storage or shipping, therefore, the picking of tender fruits is a matter requiring careful and trained judgment. A grower of cantaloups in Georgia has found that for best results he must go over his vines every eight hours.

Cold storage in transportation, however, is even more important, as it extends almost illimitably the bounds of the market. The British market is accessible for many kinds of Ontario fruits, which a few years ago were perforce marketed at home. There is, also, a large and a rapidly growing market in Manitoba and the Northwest for the best fruit which southern Ontario can produce. This market is largely supplied by fruit from British Columbia, Washington and Oregon States. If, however, the facilities afforded by refrigeration are made use of this western market can be captured for Ontario fruit.

There are certain impediments in the way of this undertaking. In the first place Ontario fruits, while perhaps of better quality than those produced along the northern Pacific, do not ship so well and are more liable to disease. The difference in climate accounts for this, the very dry summer of the coast producing a dry fruit and insuring external dryness in picking and packing. Ontario fruit is more juicy, and our uncertain summer weather makes it difficult always to ship perfectly dry. Then, too, our more humid seasons encourage all kinds of disease from which the drier climate of the coast is practically immune.

These facts emphasize the necessity of careful picking, selecting, and packing of our fruit for export. The study of cold storage as a means of preservation of fruit has laid bare many of the deficiencies that have prevented complete success in the Ontario fruit business. Cold storage has brought to notice the difference between good and bad fruit and good and bad packing. It has made it clearly manifest that it pays to store and to ship only good fruit, that it pays to select fruit of even size and ripeness, that for tender fruits particularly there is a critical time which is best for picking. A thorough knowledge of the results of cold storage cannot fail to make the fruit grower, if he regards his own interest, more careful, more skilful, and, if possible, more honest

Cold storage is of particular importance to the province of Ontario. We have large quantities of perishable produce of high quality, which, to find a profitable market must be carried outside our own boundaries. We have a short producing season, necessitating the preservation by some means of our products to be consumed during the winter of forced inactivity. We have extremes of heat and cold, both conditions necessitating well-insulated walls for storage; and, on account of our geographical and political relations, we are at a great distance from our most important markets. For all these reasons cold storage, both stationary and in transit, is of first importance to Ontario, and only by taking advantage of it can the producer realize all that he deserves for his products and the consumer enjoy to the full the bounty given forth by Ontario's soil.

PUT FRUIT IN A STOREHOUSE

A. M'NEILL, CHIEF, FRUIT DIVISION, OTTAWA.

DURING a recent visit to the Brighton-Colborne district I noted a very large number of apple barrels remaining in the orchards packed and piled, usually directly on the ground, occasionally resting on a few boards or rails. The heavy rains of the previous day thoroughly saturated thousands of these barrels unprotected in the orchards. Many of them will remain there until they are dried out by the sun and wind. This is not so harmful as the old practice of piling the fruit itself on the ground exposed to the inclemencies of the weather. Nevertheless, it is a bad practice and accounts for many of the slack and wet barrels that afterwards appear in the foreign markets. The quality of the barrels now used is greatly improved. It does seem, therefore, somewhat of a folly to expend so large a sum on a package and then allow it to deteriorate so seriously in the rain and sunshine.

Even supposing, however, there was no rain the exposure to the heat of the sun for a few days in the orchard will do more to ripen the fruit than many weeks in a properly constructed storehouse. Apples put in box cars warm, are almost certain to heat before they are placed on board ship, and then no accommodation, no matter how good, can save them. This has been the history of far too much fruit this fall. The weather has been warmer than usual, and the fruit inspectors report a much larger percentage of heated barrels than usual. In no case has there been a report of serious loss in cargoes that were reported as being of low temperature when they were shipped.

Plums in Quebec

AUGUSTE DEPUIS, VILLAGE DES AULNAIS, QUE.

THE plum crop at the Experiment Station at Village des Aulnais, County L'Islet, has been very abundant. Fifty-two varieties have given fruit this year, beginning with the "Jaune tres hative" and "Favorite hative," which were ripe August 10 to 15. These were followed by the Mirabelle Precoce and Reine Claude d'Oullins, very valuable varieties for localities where the summer is short. Then Bradshaw, Washington, Damson, R. Claude, Montmorency and others came in September, closing this month with Pond's Seedling, Grand Duke, and Coe's Golden Drop. We expect to complete the picking of these three varieties by October 18.

We pack the plums in half-gallon card boxes, put up in eight gallon crates, and they sell well at 40 cents a gallon. In October, 1902, I exported crates of these varieties to Great Britain through the firm of R. Barden, Quebec. The plums reached Liverpool in excellent condition and the returns were very satisfactory. I have shipped a great part of the crop to consumers. It causes more trouble and is more expensive, and we learn the taste of the families who consume them and of the hotel-keepers and retailers. We learn how the fruit reaches the people at a distance and the time that varieties will keep in good condition on the stands of fruit dealers. I have analysed the reports received and have come to the conclusion that 12 varieties out of 52 will be generally popular and profitable for this far northern section.

Gall Lice on Spruce Hedges

T. D. JARVIS, B. S. A., O. A. C., GUELPH.

My spruce hedge is being killed in patches by some insect which works inside a gall. I have used Paris green and have cut off the infected parts but nothing seems to be effective.—(J. C. M., Picton.

The insect which is troubling your spruce is what is known as the Spruce Gall Louse (Chermes abietis). As these insects in the feeding stage are within the gall, and the gall is perfectly water-tight so that no fluid can penetrate, poisoning is out of the question, and as in the migrating larval stage they do not eat, poison is equally useless. In the larval stage soap emulsion might be of some use if applied abundantly at the proper time. .

The cheapest and best plan yet tried in Ontario is to clip off the galls as soon as they are noticed, say in June and always before the first of August, while the producers are in the galls, and immediately burn them. There is no use in doing this after the producers are out of the galls. When a tree is too much infested to be dealt with in this way it should be cut down and burned at once.

THE WINTER OF 1903-4 AND ITS EFFECTS*

R. W. SHEPHERD, COMO, QUE.

THE disastrous effects of the severe winter of 1903-4 on our orchards were not fully understood or observed the following spring. The damage was more far-reaching than at first supposed. Trees which were killed outright were replaced, and the percentage of these, in some localities, was high—fully 10 per cent. in some instances. But we also noticed that many trees were injured, more or less, which we hoped would ultimately survive. We observed, also ,that the fruit of 1904, particularly Fameuse and a few other varieties, was considerably undersized. This was attributable to the severe shock which the trees sustained during the previous winter. The trees, apparently, had not the vitality and vigor to develop their fruit to the normal size of other seasons.

During the 30 years I have paid attention to the cultivation of the apple I do not remember having exported such small Fameuse as those packed in 1904. In fact, No. 1 Fameuse of last year would have been considered No. 2 grade in 1903. Those trees which bore a heavy crop in 1904 (I speak for my own locality) in many instances were so exhausted by the effort and their vitality had been so impaired by the severe winter, that they have succumbed altogether. The past winter, although it could not be considered a severe one, was too hard for those trees which had struggled through last season and had borne a crop of undersized fruit. One has only to go through orchards in districts such as the Ottawa Valley, Lake St. Francis district and Chateauguay to see the number of trees that have succumbed after having feebly tried to develop foliage this season.

The varieties in these districts which have withstood the winter are those to be recommended and may be considered thoroughly hardy. In my orchard they are few, and include Rochelle (very hardy), Gipsy Girl, N. W. Greening, McMahon and Winter St. Lawrence. The following were more or less injured, Duchess, Wealthy, Scott's Winter, St. Lawrence and Canada Baldwin. Those considerably injured were Fameuse, McIntosh Red, Canada Red, Golden Russett and Red Astrachan. Those very badly injured were Ontario and Windsor Chief. Of 20 trees of the latter, eight years planted, only one survived, and it is not in satisfactory condition. We had great hope of it. The tree was vigorous and healthy and bore regularly. The fruit is large, handsome, and undoubtedly a long keeper of fair quality, and an excellent apple for profitable export in barrels. It is the apple our orchardists have been looking for, for a number of years, as one able to compete with those grown in Ontario, such as Northern Spy and Baldwin. I admit that the test was severe, and it may be several years before we have such another.

The Ottawa Valley and contiguous districts, such as Lake St. Francis, sustained an extra cold blast and a degree of exceedingly low temperature which was maintained a longer period than we have heretofore experienced, but the fact remains that the late keeping varieties we have been waiting for, and which we expected had arrived when Windsor Chief was brought to the front, has not stood the test. At Mr. Newman's orchard, on the Lower Lachine road, this variety has come through satisfactorily, but his locality is favorably situated in having the open water of the Lachine Rapids, which has the effect of tempering the cold. McIntosh Red seems quite as hardy as Fameuse. It is important to know that our two most popular varieties are of equal hardiness and can be planted with equal hopes of success.

One peculiar feature of damage done to

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* A paper read at the summer meeting of the Quebec Pomological and Fruit Growers' Society.

our trees has been the splitting and lifting of the bark of the trunk on the southwest side. This has been noticeable only the present season. The cause is that those trees, last year, seemed to recover somewhat from the effects of the previous winter and started to grow too late in the season. All trees thus effected were those that had made good growth in 1904, but had been slightly injured by the winter, and they were mostly in cultivated ground. Trees of the same age in sod have not been much effected in the splitting of the bark of the trunk. This is another argument against too much cultivation, which in the province of Quebec induces too late growth. I have had so many surprises as to the far-reaching effects of the winter of 1903-4 that my confidence in successful orcharding in some localities has been considerably shaken.

Apples For Eastern Ontario

A. M'NEILL, CHIEF FRUIT DIVISION, OTTAWA, ONT.

A correspondent from Carleton County, Ont., writes:

> Our Ben Davis and Mann apple trees are dead, the Spy is dying, and the Pewaukee is showing signs of weakness. What winter apples would be the best to replace them?

As grown in Carleton County the Fameuse and McIntosh Red are at least early winter apples, and if the correspondent is growing for commercial purposes they will pay better than any other varieties he cares to plant.

For long keepers we could recommend Scott's Winter, Northwest Greening, and Milwaukee. It is quite possible that Wolf River will be hardy and will keep well into the winter. I would not recommend commercial orchards of these varieties.

Cherries Can Be Grafted

J. M. M'AINSH, WELBURNE, ONT.

IN the August number of The Horticulturist, page 294, I notice a question asked about grafting the cherry, and the answer is: "The cherry cannot be grafted so far as I know." I have grafted the finer varieties of cherry on the common red cherry, which, before the appearance of the black knot, was grown all over the country, and was usually propagated by suckers. I generally topgraft them. I do not find any difference whether the tree is large or small, so long as it is vigorous and healthy. In any case I only graft on small sized limbs, so that the larger the tree the more grafts will have to be put in. I do this work early in the season, just when growth begins, and cut the scions fresh from the tree. I graft them the same as I do apples, using cotton cloth saturated with common grafting wax and putting it around three or four times to prevent the wax from cracking.

Although cherries are not as sure as apples, yet I generally have more than 50 per cent. of the grafts to grow. Your correspondent says his trees were got from the fence corners two years ago and are thrifty and measure one and a half inches through the trunk. I consider such stock very fine to graft on, and if properly done I would expect all the way from 50 to 90 per cent. of them to grow.

Pruning and Spraying Trees

"WHEN trees are well pruned and well sprayed," said Mr. Joseph Tweddle, of Fruitland, recently to a representative of The Horticulturist, who visited his place, "they have a vitality which enables them to hold their fruit to maturity and prevents loss from winds.

Trees heavily loaded with fruit are not so likely to sway with the wind and to drop their fruit. Where pruning is well done it permits the sun to reach the fruit and results in the fruit being better colored."

FALL WORK IN THE STRAWBERRY PATCH

THOSE who have had experience in strawberry growing know how essential it is that the patch be kept free from weeds and in excellent condition during the first season. If weeds are allowed to go to seed they must be fought throughout the fruiting season or a greatly decreased crop will be harvested and more work is entailed in obtaining the diminished returns. The successful grower continues frequent cultivation until the growing season is ended.

Very few varieties of strawberries are capable of withstanding the hardships to which they are subjected during the winter and spring months in Ontario unless some protection is given. There are, however, winters when no covering is required, but it requires little time to add sufficient mulch each fall to ensure a healthy vigorous patch in the spring. Besides being an insurance, some mulch can be used which enriches the ground as well. It is not so much the heavy frosts which do damage to the plants; it is the alternate freezing and thawing of early spring when the snow has melted from the patch.

PUTTING ON THE MULCH.

The time to apply the mulch depends on the season. Most growers recommend putting it on as soon as the ground is frozen hard enough to carry the horses and wagon. In no case should it be applied before growth ceases. Different materials are used in different sections. Much depends on what can be obtained most readily. Strawy horse manure is most commonly applied. It is an effective mulch and the ground is fertilized by the finer particles being washed in by the rains. Straw alone is sometimes used, while swale hay is excellent for protection but does not contain the manurial element. It is not wise to put on too heavy a covering. It should be worked in well amongst the plants in the bare places and sufficient on top to hide the plants. Light straw could be applied in greater quantities than could some of the other mulches.

As a general rule the covering is removed in the spring as soon as danger of hard freezing is past. Bright sunny days and frosty nights are most disastrous. It is not wise to remove all the covering at once. The best plan is to rake the coarser parts of the mulch off the plants between the rows where a surface mulch is required to keep down weeds and conserve moisture during the spring and summer. Besides, a mat is afforded to the pickers while harvesting the crop and the sand is prevented from splashing on the fruit during rains.

Some growers apply a liberal mulch in the fall and leave it on late in the spring to retard the crop. With judicious mulching, covering the tops of the plants as well as the soil, the flowers and fruit can be retarded a week or 10 days. Care must be taken, however, not to leave the covering on too long or bleached weakly plants will result.

"I cultivate my strawberries frequently through the summer," said Mr. Wm. G. Horn, of Clarkson, "and always put on a mulch as soon as the ground is frozen hard enough to get on it with the wagon. Almost every enterprising grower in this section applies a mulch of some kind. Coarse strawy horse manure is best. The finer manure helps to fertilize the soil while the straw protects the plants from frosts.

"In the spring when growth is nicely started I pull the coarser stuff between the rows to conserve moisture and serve as a mat for the pickers. The crop can be delayed some time by leaving the mulch on, but if left there too long the plants are injured."

"I use horse manure as it comes from the transport stables in Toronto for mulching my patch," remarked Mr. H. Pickett, another successful strawberry grower, of

Clarkson. "Some use straw and others swale hay, but I consider manure is the best because it enriches the ground and gives a heavier crop. There are a few hardy varieties which do well in this section without mulching."

CARE OF PLANTS WHILE DORMANT

WM. HUNT, O. A. C., GUELPH.

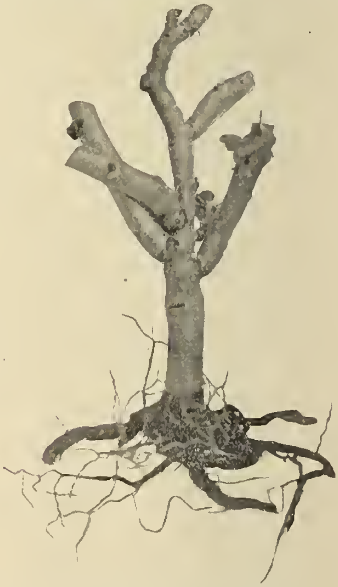
THE tender pot hydrangeas such as Otaksa, Thomas Hogg, and similar varieties of these lovely summer decorative plants, should have their growth well ripened and hardened before the plants are consigned permanently to cool winter quarters in the cellar or basement. To secure this condition the plants should be left out of doors as late in the season as possible. It is not well, however, to expose the plants to more than five or six degrees of frost.

The plants can often be left under the shelter of a veranda or open shed until late in the season, so as to ensure a thorough ripening and a perfectly dormant condition. Less water can also be given them than in the summer, but at no time, either now or during the winter, should the soil be allowed to become very dry. Many of these and similar plants are often materially injured, if not killed outright, by drying them off too severely and for too long a time in winter. They should be kept in a dormant condition in a temperature of about 40 degrees until March or early in April. At that time the plants should be transferred to pots or tubs two or three sizes larger than the ones in which they have been.

Hydrangeas like a rich loamy compost to grow in, and plenty of water when growing and flowering in summer. They require very little, if any, pruning. Removing a few of the most prominent shoots so as to secure a shapely plant is usually all that is necessary. Prune, if necessary, in March or April, when repotting them.

A short period of dormancy, or semi-dormancy, is necessary for fuchsias and pot roses if they have been kept growing all summer. About the same treatment during the resting period should be given them as recommended for pot hydrangeas. A fairly moist cellar is preferable for all of these plants rather than a dry furnace-heated atmosphere.

To keep oleanders successfully a light, fairly warm room, cellar, or basement is best. They do not come out in the best condition if placed in a dark cold cellar or in a dry over-heated place. Oleanders are naturally moisture-loving plants. A temperature of from 45 to 50 and a moist atmosphere suits them in winter splendidly. It is advisable to sponge the leaves a few times during the winter with water, or soap and water.



Geranium Cut Back

Dahlia roots can be kept best in a temperature of about 45 degrees. These, also, do not like a dry, furnace-heated atmosphere, preferring a rather damp, cool cellar. The stems should be cut down to about six inches above the roots. The roots are very easily damaged by frost when exposed.

Anthericum Picturatum

A fairly dry cool place is necessary to keep gladioli bulbs successfully. Avoid putting them in a very damp cellar as it induces mildew and rot. A very dry cellar is not advisable for them. A dry basement, room, or cellar, where a temperature of 40 of 50 degrees prevails, suits very well. It is best to leave three or four inches of the flowering stem on the bulbs or corms for a few weeks after digging. I have kept gladioli bulbs successfully in a moist, cool cellar by stringing them to the joists in paper or cotton bags, or tied in bunches by the stems.

Old plants or stumps of geraniums, if not frozen too severely, can be taken from the bed or border, cut back and potted in sand or sandy soil and be kept through the winter with very little trouble. In digging, care should be taken not to break off the roots. Cut the top growth of the plant down so that only two or three inches of the base of the shoots remain near the main stem, and shorten the roots a little if very long. Plant three or four of these stumps or roots in some sharp fine sand or in half sand and half potting soil, in a six-inch pot. Water them well once and stand the pot away in a cool window or in a light cellar. One plant can be put in a four-inch pot or smaller if desired. Give them water only when the sand or soil is getting quite dry, more especially if they are put in the cellar. A temperature of 50 degrees suits them. If a large number of plants are wanted pack them closely in sand or sandy soil in boxes three inches deep, with holes in the bottom for drainage purposes. The sand or soil should be kept only barely moist, never wet or soddened. These roots or stumps can be potted at any time during winter or spring and will make fine bushy plants next season. They are frequently much better than autumn struck cuttings.

SOME FINE WINDOW PLANTS.

The Anthericum picturatum is suitable for window or house decoration in winter, and should be more commonly grown than it is. Its pretty variegated yellow and green leaves, together with its easy culture, makes

Impatiens Sultani

it one of our most desirable decorative plants for the window. It loves a warm shady position and a moist soil. There are two variegated varieties of this easily grown plant, but Anthericum vittatum is not as pretty as the picturatum. Young plants are produced, as seen in the picture, on the stolons or flowering stalks, and can be easily removed and potted.

Sanseviera Zeylanica

Belonging to the same family as the common garden balsam, is Impatiens Sultani or Zanzibar Balsam, often erroneously called the Patience Plant. It takes its generic name, "Impatiens," from the fact that like the garden balsam it bursts its seed-pods in a very impatient manner before the pods are really ripe. Anyone who has attempted to pick a pod of balsam seed in the garden before it seems to be mature can testify to the hasty impatient manner in which the seed pod bursts, scattering the seed in all directions. Unlike most common or local names the name " Patience Plant " is not at all appropriate.

A warm sunny position in the window gives the greatest profusion of the pretty rose-scarlet flowers. The magenta and salmon colored varieties of this plant also are very pretty and attractive. Under suitable conditions new plants are frequently obtained from self-grown seed.

Green Fly and Red Spider are the worst foes of this desirable window plant. Tobacco water for the Green Fly and a good sprinkling of clear water on the under side of the leaves for Red Spider are the most approved remedies.

Another pretty window plant seldom seen is the Peperomia. Its pretty silvery marked leaves look very effective in winter time. A warm shaded position in the window suits it best.

One of the best gas resisting plants we have for the house is the Sanseviera Zeylanica, or Bow-string Hemp plant. Although not of a graceful habit its tall spire-like silver-barred foliage is very effective in a collection of window plants. It will succeed best in a warm situation in the house away from the window, as its tough leathery leaves do not show the effects of dry atmosphere like other plants. It must be watered very sparingly, as over-watering or too frequent waterings will kill it unless it is kept in a very high temperature. It is a slow growing plant and requires very little pot room but plenty of drainage.

In the fall I always plow to the rows of small fruit bushes and grape vines to shed water away from the roots. In low ground the frost is liable to heave the plants out in case this is not done.—(A. W. Peart, Burlington.

FALL CARE OF LAWNS

To have a beautiful lawn through the summer special care must be taken in the fall. Close and frequent cutting during the warm months gives the best effect, but when winter approaches it should not be kept cut so close as it is well to have considerable growth for protection during the rigors of winter. If, however, it is allowed to become too long there is danger of it forming a close mat and damaging its own roots.

GOOD FERTILIZERS.

If the grass has lost its fine rich green color or is becoming thin in places, fertilizers are required. Most landscape gardeners recommend adding a dressing of some of the coarser fertilizers in the fall, while others use a quickly soluble one in the spring. A thorough dressing of rich cow manure in the fall is as effective as anything in producing the desired growth, but the unsightly appearance and rank odor prevent its common use. A fine compost is claimed to be equally effective and has not these objectionable features. Commercial lawn fertilizers are suitable but very expensive. They are composed of salts of ammonia, soda and potash, and these elements can be secured for much less money in their unmixed state. Finely ground bone, fish, ets., being slowly soluble, may be used late in the fall or during winter when it will be washed down amongst the grass with the melting snows.

"We do not cut the lawn much after October," said Mr. E. F. Collins, of Allan Gardens, Toronto, to a member of The Canadian Horticulturist staff recently. "The grass should be quite a length before winter sets in so that the covering may protect the roots. If any fertilizers are to be used it is best to apply them early in the fall before frost comes so that they will have worked down through the grass and produce a rapid growth in the spring.

"The lawn should be kept perfectly clean. If rubbish is left lying around and leaves are allowed to collect, the grass is weakened in a few days and a bare spot frequently results."

Wintering Pansies

"THERE are plenty of pansies grown," said Mr. P. Fogarty, of Fogarty & Sons, Pape Avenue, Toronto, to a member of The Horticulturist staff who visited his place recently, "but the large grower must have something better than the 'other fellow' if he hopes to find a ready market.

"Pansies like cool weather, and the best quality of bloom is always produced on thrifty plants late in the fall or early in spring. With a good strain, a nice clay loam, and plenty of work, it is not such a difficult matter to winter the plants and have an abundance of bloom before warm weather comes in the spring.

"We start the seeds outside and then set the young plants in cold frames four inches apart each way. Some varieties come into bloom much more quickly than others. Our earliest usually show some bloom in the beginning of October and then others follow until the ground is frozen up.

"When cold weather comes the sashes are set on the cold frames to protect the plants. In case we have not enough glass to cover all the plants we spread straw over them. The straw is equally effective but gives far more work. In the spring as soon as fine weather comes there is a profusion of the finest bloom."

Let plants such as the calla lily rest until they show signs of growth and then shove them as rapidly as possible.—(A. J. Frost, Preston avenue, Toronto.

FALL AND WINTER CARE OF PLANTS*

E. F. COLLINS, PAPE AVENUE, TORONTO.

WITH the summer season over, the best method of saving the different roots and bulbs, and of keeping over some of the plants and flowers, which have given so much pleasure during the past season, becomes an important matter for the amateur gardener. The commercial florist or private gardener usually has a dry cellar or shed in which they may be kept free from frosts, but the amateur is often at a loss to know how to winter his plants safely.

Let most plants, such as dahlias, cannas and gladioli have a touch of frost before disturbing them. Then, after a few bright sunny days, the stems will begin to dry up. No set time can be made to cut them down as all depends on the weather. Usually about the middle of October they may be cut down to within six inches of the ground. Care should be taken to label the different kinds, or if the name is not known the color may be marked. The work is made much more interesting in the spring if you can tell what varieties have kept best. Besides, if you wish to exchange specimens with your friends, half of the pleasure is lost if you cannot tell the names or color.

To keep cannas or dahlias, dig them up on a dry day and shake off most of the soil, taking care not to break off any of the tubers. Place them one root deep in a box or something which can be moved about easily. If the weather is fine leave them outside in the sun during the day for a week or more. That will ripen the skin and dry up any bruises which may have been made in them, as where there are bruises is where they will start to decay. Thorough drying lessens that danger. After they are well dried, and before they start to wilt, they should be packed fairly tightly in boxes in a single layer (not one on top of the other) and some dry sand or soil should be shaken between them and on top, to cover the tops of the tubers. Then they can be put in some place where the thermometer stands about 40 degrees all winter. The great secret is to have them remain dormant and that is accomplished by a low temperature, a perfectly dry atmosphere, and having them well ripened before storing. The lover of flowers is often in too great a rush to put the bulbs away instead of giving nature a chance to ripen them.

Dahlias are more easily kept than cannas. Many of the newer varieties of cannas winter very poorly, especially if the tubers are not properly developed. If there are varieties which you are short of and want to increase, dig them up and put them in pots or boxes which will just hold the roots and give them a good watering. Place them outside in the sun each day while the temperature remains about 40 degrees, and do not give them any more water, as they should be perfectly dry. Most of the old growth will have dried up and they can be cut off about four inches from the base. Numerous green shoots will be seen starting up from the roots. If they are kept dry and near a window in the cellar or any cool place they will remain quite plump and green, but will not grow until spring. About March they may be cut in small pieces and planted. Nature will do the rest.

Gladioli may be dug and tied in bunches, but care must be taken not to cut any of them, as it is much better to let the stems dry off. If hung up in a dry place the corms can be very easily pulled away from them during the winter and stored in a cool place.

Tuberous begonias must not receive more than a very slight frost—just enough to wilt the foliage. When dug, most of the soil which adheres to the fibrous roots should be shaken off and the tubers packed fairly tightly in boxes. The tops must be allowed to shrivel. They should never be cut off. If placed in a cool dark corner and kept dry they remain dormant until brought out in the spring.

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* A paper read at the October meeting of the Toronto Horticultural Society.

Sometimes it is desirable to keep over a few favorite geraniums for the next summer. If placed among the other window plants they look unsightly during the winter. The best plan is to put them in pots or boxes just large enough to get the roots in, and give a thorough watering. If put outside in the sun each day and allowed to become perfectly dry all the leaves drop, the outer tissue becomes dry and the color changes to brown. Before frosts come during the daytime stop putting them outside but place them near a window and away from furnace heat. If not given any water they will remain dormant until spring. When growth is wanted they should be watered about once a week at first and placed in a warm room. In a short time new shoots come. Then the plants must be cut back severely to get the growth from the bottom. Plants treated in this way are much more suitable for setting out than those kept growing all winter.

The hydrangea is another plant which the amateur often tries to keep growing during the winter when it should be at rest. If the plants are outside let them remain there until there is 10 degrees of frost. In the meantime water them only when they are wilting. By gradually withholding the water you are assisting nature to ripen the wood and causing the leaves to drop. This encourages the development of buds for next season's growth. After the plants are perfectly dry and have lost most of the foliage, lay them in a box in a dark corner of the cellar and cover with dead leaves. This keeps them from drying out and also prevents growth. In this way nature is assisted in storing and retaining all the vigor in the plant, and in the spring when the warm weather comes and water is added growth begins and flowers come readily.

Mealy Bugs on Coleus

PROF. H. L. HUTT, O. A. C., GUELPH.

What is the best treatment for lice on foliage plants? They are not the green lice, but are oblong and flat and of a whitish grey color. I have tried tobacco smoke and soapsuds, but they were not effective.—(A. J. M. Ratho.

By the term "Foliage Plant" I suppose you refer to the Coleus. This plant usually goes by the name of Foliage Plant on account of its beautifully variegated leaves. The Coleus is frequently infested with small insects of a whitish color, known as Mealy Bugs. If they be examined closely it will be found that the insects themselves are very small, but they secrete waxy scales which give them a mealy appearance, hence the name Mealy Bug. This waxy cover serves the purpose of protection, and makes it difficult to destroy them by smoke or caustic solutions.

The best means of getting rid of the insects is to begin with fresh cuttings and exercise great care that none of the insects get a start on them. They will usually be found hidden in the axils of the leaves, and before they develop the waxy covering they are so small that it requires close observance to detect them. When they are present on young cuttings, the best way to get rid of them is to brush them out of their hiding places with an old tooth brush or other stiff brush, which should be first dipped in strong soapsuds. It is hardly worth while trying to save old plants which have become badly infested.

Do not crowd blooms for exhibition too closely. Each flower should be seen singly when arranged in the vase.—(Wm. Hunt, O. A. C., Guelph.)

THE DESERONTO COMPETITIONS

FEW horticultural societies in Ontario have been doing better work than has been done by the Deseronto society during the past year. The aims of the society, "to cultivate and improve the taste for flowers, plants and trees, and to assist the citizens in beautifying their homes by increasing their knowledge of plant life," have been nobly carried out. The society made valuable distributions throughout the year of seeds, bulbs and plants for spring and summer planting, and again in the fall for house culture. Then a creditable flower show was held on September 13.

But this was not all. Four competitions in well kept grounds were held. These were: Best kept grounds, professional; well kept grounds, exceeding one town lot, amateur, with assistance; well kept grounds, not to exceed one town lot, amateur, with assistance; and well kept grounds, not to exceed town lot, amateur, without assistance. In each case handsome prizes were offered. Special interest and enthusiasm was manifested in the competition between amateurs without assistance, and as a result Deseronto can boast of as many beautiful lots as any town of its size in Ontario.

Some of the contestants were handicapped in not having as favorable location or natural conditions as others and found it difficult to make the lot present a pleasing appearance to the passerby. Some, which would have stood near the top as beautiful gardens, could not be placed high because the effect from the street was not good.

The judging was done by Mr. E. F. Collins, of Allan Gardens, Toronto, to the satisfaction of all. He reports that the placing was rendered very difficult owing to a lack of uniformity in size.

First prize went to Mr. D. R. Jones, whose lot was favorably laid out for beautifying. It had a strong advantage in the contour of the land and in having the house to one side, so that an excellent view was presented to persons passing on the street. "Mr. Jones had a grand collection of plants, and his grass was in fine condition," said Mr. Collins. "Dahlias were most prominent among the flowers, while the tall-growing asters, gladioli, zinnias and

First Prize Garden, Owned by D. R. Jones, Deseronto, Ont.

Second Prize Garden, Owned by D. McClew, Deseronto, Ont.

geraniums were also beautiful. The general effect was good and everything was neat and clean."

Second prize was awarded to Mr. D. McClew. "This was a beautiful lot," said Mr. Collins, "but the general effect from the street was not so striking. The bedding plants were fine but more sparce in the beds than many of the others. The most prominent flowers and plants were gladioli, dahlias, tuberous begonias, asters, sweet peas and nasturtiums."

Third Prize Garden, Owned by H. E. Parks, Deseronto, Ont.

Mr. H. E. Parks secured third prize. "For back yard effect," remarked Mr. Collins, "this was simply perfection. The effect, however, must be for the public. The side entrance was not as nice as some of the others. There was a good effort made to cover fences and unsightly places, and in doing this Madiera vine, nasturtiums, sweet peas and all growing asters were used to good advantage. Besides these there was a fine collection of dahlias, tuberous begonias and other plants."

Many societies in different parts of Ontario could profit by copying some of the features which the Deseronto members have found to be so successful. The distribution of seeds, bulbs and plants is good, and flower shows create an interest in horticultural work, but competition in lawns and garden flowers for the beautifying of the lots does infinitely more to impress the stranger with the beauty of the town, and if a few are enthused in this way others copy from them in order that their lots may look as beautiful as the one beside it.

FALL PLANTING OF ROSES

FALL planting of perennials and some of the shrubs is becoming more common every season. Many of the most successful amateur horticulturists report less loss from fall than from spring planting.

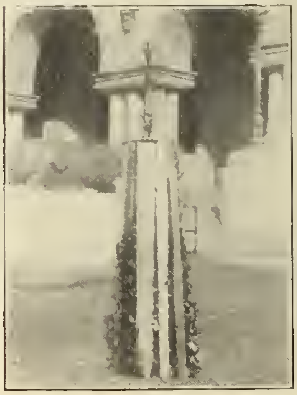
"I prefer to set out my roses between October 20 and November 10," remarked Mr. H. Spencer Case, of Hamilton, who always has a fine collection of plants. This leaves them plenty of time to become established before the ground is frozen up, and when spring opens the roots and canes are full of sap. The result is I get a good crop of bloom the first season.

"If put out in the spring there is a heavy strain on the bush for two or three weeks, and it does not make good growth. I have tried planting both seasons and had a lower percentage of dead bushes and more perfect bloom from the planting done in the fall.

"I always protect my roses with a straw mulch," continued Mr. Case. "In September or October I give a light pruning, cutting off about one-third of the cane to give a finer appearance and make the wood ripen better. Then before winter has set in, straw is put around them to a depth of about six inches. Some of the tenderer specimens receive extra protection by having the straw laid up around them.

"I have tea roses, hybrid teas, hybrid perpetuals and such tender varieties. They are all kept outside the year through and I do not lose two bushes a year."

Now and again some enthusiastic lover of shrubs wishes to grow some tender specimens. In this case special means of protection must be resorted to. Sometimes the bushes are laid down and covered; other gardeners wrap them with long straw; while others put empty barrels over them and fill in around the shrubs with dry leaves or straw. The accompanying illustration shows a tender specimen protected by leaves held around it by a rack. This method entails considerable work, but is successful if done after the wood is ripened and before heavy frosts come.


Ready for Winter

Potting Soil

WM. HUNT, O. A. C., GUELPH.

THIS is a good time of the year to make a pile of potting compost. Sod, about four inches in thickness cut from a pasture field or by the roadside where the soil is of a loamy nature, makes the best basis for a good potting soil for plants. Avoid taking the sod where couch or spear grass is growing. Stack two layers of the sod with the grass side downward, cover this with a layer of cow manure or well rotted stable manure to a depth of five or six inches.

Continue successive layers of these materials until the pile is large enough. Make the pile in the open not under cover. Cover the pile with some brushwood to keep off chickens and animals. It will be ready for use next May or perhaps earlier.

If a man goes into tomato growing on a large scale there is more money in growing them for the canning factory than for any other market.—(W. A. Best, Picton, Ont.

I depend on thorough cultivation, heavy pruning and plenty of fertilizer to give me returns.—(J. M. Metcalf, Grimsby, Ont.

FORCING TOMATOES

THE forcing of tomatoes for commercial purposes has been receiving considerable attention in different sections of Ontario during the past few seasons and an increasing demand is causing the growers to erect greenhouses each year. As the best market is found during the Christmas holidays and from then until Easter a special effort is made to have the crop ripe shortly before Christmas.

In Bulletin No. 231, Cornell University, Ithaca, New York, matters in connection with forcing tomatoes are dealt with by Professors Craig and Hunn. It is of the utmost importance that a suitable size and perfect shape be obtained. Sales are usually made at a high price and the consumer orders a definite number of fruits rather than a specific weight. Tomatoes of irregular shape are unattractive, and if large the cost would be too high, as they are served one to each individual. Therefore, it is necessary to have them of moderate size and as uniform as possible.

After four years testing at Cornell, several varieties have been found which are adapted to forcing. The characteristics mentioned as being desirable are: slow stocky growth; healthy, but not heavy foliage; a habit of forming the first cluster of buds near the base of the plant and a protruding stigma capable of setting fruit with a minimum amount of pollen.

BEST VARIETIES FOR FORCING.

In many respects the English types of tomatoes have proved to be far superior to those of American origin. They set fruit more readily in dark weather; they grow the fruit in clusters, ripening the full cluster within a short period, and they continue growing considerably longer. Among the most satisfactory American varieties are Lorillard, Mayflower, Combination and Pepper. For general midwinter forcing Lorillard and Combination (American), and Frogmore and Holmes' Supreme (English) are mentioned as being the four best.

Too copious watering before dull weather brought on a yellowing and spotting of the leaves which considerably checked the growth. The White Fly caused trouble, but was controlled by fumigation with hydro cyanic acid gas, using potassium cyanide 98 per cent. strength and a 66 per cent. solution of sulphuric acid with a small quantity of water. Experiments with different strengths and under different conditions showed that damage was done when the fumigation took place in daylight or when the houses were very damp. Safe conditions are stated as absolute darkness, a still air, a temperature below 60 degrees, and a dry house. Fumigation once each month with one ounce of potassium cyanide, two ounces of sulphuric acid and four ounces of water to each 1,000 cubic feet of house space will keep down the fly. Great care should be exercised in using this gas as it is sure death to all animal life.

In different parts of Ontario growers force a few for the winter market. "I like to have a few tomatoes ready for market before Christmas," said Mr. Jas. Gibbard, of Doncaster, to The Horticulturist recently. "The seed is started outside and as soon as the plants are large enough to handle I set individual plants in old strawberry boxes. By August they are about six inches high, and early in that month I transfer them to the greenhouse.

"I prefer planting them on ground benches in about eight inches of rich soil made from sod and well rotted manure prepared the previous fall. As soon as the plants begin to lop over I string them up. Some stake them with laths, but I find the stringing much less expensive.

"All side shoots must be kept nipped off, leaving only the terminal. If this is not done there would be too much top for the roots and a small crop of fruit would result. Careful stringing and continual trimming gives fruit in greater quantity and better quality.

"The Green Fly and mildew are very troublesome in forcing tomatoes. Fumigation with tobacco keeps the former in check, but there seems to be no cure for mildew if it becomes established. Sulphur will check its spread, but the main thing is to keep the plants dry and maintain a free circulation of air. Water should never be used unless the sun is shining brightly. I always make it a point to do the watering in the morning. If the weather is cloudy no harm will be done to the plants if they are left for four or five days at a time.

"If the beds are well attended to and the weeds kept down the fruit will ripen by Christmas or earlier. There is always a brisk demand from the holiday season until April, but in May and June the market is flooded with the crop grown outside in the United States."

Keeping Potatoes

MARKET gardeners will be anxious to learn some of the methods adopted by Mr. Wm. Naismith, of Falkenburg, who has won first prize for collection of potatoes at the Toronto exhibition for 14 years in succession. Mr. Naismith went into Muskoka years ago to clear a plot of ground on which to make a living. As the land is specially adapted to the growing of roots he has gone into that line extensively. Particular attention has been given to potato growing and he has originated some new varieties. His success is due in a great measure to the care given to the selection of seed. His method of storing is inexpensive, and the potatoes always come out in fine condition in the spring.

"When digging my potatoes," remarked Mr. Naismith, "I always select those specimens which come near to my ideal for size and shape. These are kept for seed the following spring. This is the best and surest way of raising the standard.

"The potatoes are always stored in pits, or, perhaps, better called dig-outs. By putting the pit in the south side of a bank, about 25 bags in a pit, very little covering is needed. I put up a frame work to keep the dirt away from the potatoes. The pit is filled to within about one foot of the ceiling. Then six inches of hay or straw is put on to take up what moisture comes from the potatoes. The six inches of straw and six inches of air space along with a foot of earth prevents any injury from frost. I have always used this storage and have first-class seed in the spring. The potatoes never sprout and remain perfectly solid."

Cauliflowers Do Not Keep

THE cauliflower, though commonly grown in Canada, is not usually stored with success. Though belonging to the same class of plants as the cabbage, it is very much less hardy and is very sensitive to adverse conditions. The crop ripens very irregularly and frequently a large percentage remains immature when frosts come.

Some growers recommend digging up the plants and putting them in cold frames until they mature. This, however, means much work and few growers care to go to the trouble. In ordinary storage mature heads do not keep longer than Christmas, and in most cases those that are not disposed of before then are lost.

"I stored cauliflower only once to make any profit," said Mr. Jas. Dandridge, of Humber Bay, to The Horticulturist a short time ago. "That time they were pulled before frosts came and stored in a long pit. I dug a trench about 18 inches wide and deep enough to stand the cauliflowers on end. In this trench the cauliflowers were placed heads upward as tightly as they could be packed. Cross pieces were put over the top and a light covering of boards put on until frosts came. As soon as the cold weather set in a covering of coarse manure was added.

"If they are pulled about November 1 and special care given they may be held until about Christmas, but a slight frost damages them and rot soon sets in. It is not advisable to try storing many. They should be sold before winter sets in if possible."

Fall Work in the Garden

MOST gardeners and fruit growers have general work completed by the early part of November, but there are always a few days after that time when much can be done to make less work and better conditions for the following season. No diseased leaves or roots of plants should be left on the garden to carry the diseases over for the succeeding season. Rubbish of any kind on the garden or along fences or buildings near by serve as desirable hiding places for insects during winter. Therefore, clean up before snow comes.

The market gardener who has to start many plants in hot beds should make full preparation for early spring work now. The hot beds and cold frames can be left in such shape that very little time is lost in getting the seeds or plants into their places at the proper season. The garden should be fall plowed and left to the mellowing influences of the weather during the winter months.

"I always plow in the fall if I can find time," remarked Mr. Jas. Dandridge to The Horticulturist. "There are many reasons for doing this. Cabbage leaves, carrot tops, and all such vegetable matter are turned under and incorporated with the soil to act as manure the following spring. Weeds, too, which come late in the season are destroyed. Besides, it puts the land in better condition for the spring work. When plowed again after the warm weather has come it makes a nice mellow seed bed for garden crops."

Results From Fertilizers

"I HAVE been using commercial fertilizers for 20 years," said Mr. Earl Spencer, of Picton, to a member of The Horticulturist staff who visited his place, "and I find that four times out of five the best crop is harvested from the soil which has received the most fertilizer. I used to use compost in celery trenches, but one season ran out of it and used another fertilizer. It has been a good thing for me that I was forced to do this.

"I can get as good or better results by giving a liberal coat of manure in the fall and working it in well and then applying some commercial fertilizer in the spring. It entails far less labor. Nitrate of soda gives big returns, but it must be applied by an experienced hand and only to the soil. If any of it touches the plant the foliage is burned. This season I destroyed a patch of melons by its use. Another objection to its use is that its effects are not noticeable after about three weeks. Other fertilizers made up of different ingredients last for three years or more, but the best returns are found the first season.

"From my experience I recommend the use of some fertilizer with small fruits and vegetables, and I have found that the best is the cheapest in the end."

A garden crop should be cultivated whether it has weeds or not.—(W. A. Best, Picton, Ont.

I thoroughly enjoy reading The Canadian Horticulturist.—(Norman Gill, Berlin, N. H.

The Canadian Horticulturist

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FREE TRADE OR AN EQUAL TARIFF.

The vegetable growers have decided that their plea before the tariff commission will be free trade or an equal tariff. In deciding to ask for an increase in the duty on only those vegetables that are the most largely produced in Canada and for only such an advance as will protect the Canadian grower without preventing the importation of such vegetables the officers of the Ontario Vegetable Growers' Association have acted wisely.

Many growers favored an increase in the duty on such vegetables as asparagus and melons. While an increase in the duty would be of great assistance to some producers the number is so limited while the consumption of such vegetables is so general strong opposition to such an increase would be aroused. This opposition would weaken the whole case of the growers and might result in their failing to gain an increase in the duty on the more important vegetables such as cabbages, cucumbers, tomatoes, etc.

The cry of the growers for free trade or an equal tariff is a just one and should strike the public and the commission as such. The people of the United States are devoting more and more attention to the matter of free trade with Canada. In the demands of the vegetable growers they can find no reason for further reprisals on their part. This move of the vegetable growers is really in the direction of ultimate free trade.

THE HORTICULTURAL EXHIBITION.

In the Ontario Horticultural Exhibition the fruit, flower and vegetable growers of the province have a great opportunity. No better means of advertising the horticultural resources of Ontario than this exhibition could be devised and with proper management it should result in an increased demand for these products. The educational features, also, are of great importance.

This year four conventions will be held in connection with the exhibition. For these conventions several of the most noted speakers on the continent have been secured. Arrangements have been made for thorough discussions of the various subjects dealt with and nothing but good can result. With the prestige gained from last year's show and the benefit of having Massey Hall for this year's effort the exhibition this month should prove a credit to the province. It will mean dollars in the pockets of those fruit, flower and vegetable growers who are able to attend.

SUCCESSFUL COOPERATION.

The success which this year has attended the work of the various cooperative fruit growers' associations in Ontario is most gratifying. The old associations at Chatham, Forest, Walkerton and other points have disposed of their apples in bulk at thoroughly satisfactory prices as have also the two new associations at Oakville and Thornbury. In most cases the apples have been purchased by British importers. In this way the growers who belong to the associations have saved the commissions of the dealers on this side who buy most of the crops.

The number of British commission firms which each year send representatives to Canada to contract for fruit is rapidly increasing. These men are glad to have the opportunity to purchase in bulk which the associations afford. Were there more associations in Canada it would soon be possible for most of our apples to be forwarded direct from the storage house of the associations to the importers and possibly to the retailers in Great Britain. This would mean a great saving to the grower and better satisfaction on the part of the purchaser. The natural growth of the cooperative movement is in the line of an increase in the number of these associations.

I consider The Horticulturist a vastly improved paper and feel sure that it will do much towards bringing the industry of fruit growing before the public.—(R. F. Robinson, St. Catharines, Ont.

ANALYSIS OF CANNED GOODS

In the laboratory of the Provincial Board of Health for Ontario an examination was made of the various canned vegetables, fruits and jams put up in the province for the purpose of finding out whether poisonous metals are present, whether adulterants or preservatives are used in their preparation and whether there is any reason for the prevalent opinion that the use of canned goods is injurious to health. The results are given in the annual report recently submitted to the legislature.

Peas from four factories were examined. Traces of copper were found in only one sample. Four showed traces of zinc. No adulterants were found, but starch was used in two cases to thicken the menstruum, with what object could not be determined, as the pasty mass was not inviting in appearance and did not improve the flavor. Three specimens contained cane sugar, five dextrose and one common salt. Sugar and salt improve the flavor of the peas. One canner had evidently sprouted his peas, making them very sweet and tender and increasing the bulk so that only three-fourths as many were required to fill a can.

Four specimens of tomatoes from as many canneries showed traces of copper and three showed zinc, but not enough to be harmful. The juice was very acid, but no tin was found as expected. Evidently nothing but salt had been added to the contents.

Three cans of corn from three different canneries showed an absence of poisonous metals, except one, in which there were traces of zinc. The cans were quite discolored, and one was so rusted that particles of metal adhered to the corn.

All the canned raspberries were of poor appearance, especially the white varieties, which had been treated with a purple dye. Three showed traces of zinc and two of tin. All were acid and had been preserved with cane sugar.

Three specimens of strawberries looked well and were of fine flavor. No coloring had been added. Traces of zinc were found in three and tin in two.

Two cans of plums looked well and were of good flavor. Both showed traces of tin. They were more acid than the raspberries or strawberries. Although enough specimens were not examined to draw any general conclusions nothing out of the way was found in any of the canned fruits.

The jams were all made up, a filler, probably apple, having been used. Many cans, labelled "true fruit," "absolutely pure," etc., contained very little real fruit, the balance being filler, coloring, flavoring and sugar. They were all of the ten cents a jar variety.

Salicylic acid as a preservative was not found, nor gelatin which might be used for thickening. Cane sugar was used throughout, though glucose may have been added. The coloring matter was apparently of the aniline dye variety.

Bulletins and Reports

Bulletin No. 101 of the Maryland Agricultural Experiment Station, gives the life histories and remedies for common injurious insect pests of that state. The woolly aphis, the round headed borer, the San Jose scale and many others are treated in full. Many illustrations show the different stages of the insects and the work they do. Several pages are also devoted to beneficial insects and insecticides.

A report of the forty-first annual meeting of the Nova Scotia Fruit Growers' Association, a copy of which has reached this office, contains many instructive addresses and discussions.

The seventeenth annual report of the Hatch Experiment Station, of Massachusetts, contains much that is of interest to fruit growers. Experiments with apple pomace show that it is practically equal to corn silage in feeding value pound for pound. A series of experiments and special studies in pruning is being carried on. Peach trees left unpruned for nine years are less thrifty than those pruned. Heading back, summer pruning and pruning to renew frozen trees are each being tested, and definite information will be forthcoming in an early report. In pruning to renew frozen trees the result so far shows that a greater percentage of the trees moderately pruned are in better condition than those not pruned or those heavily pruned.

Like good wine The Horticulturist acquires quality with age.—(Auguste Dupuis, Villiage des Aulnaise, Que.

Should Have a Certificate

A FRUIT GROWER.

While at the St. Louis exposition I noted that Canada made a very fine display of fruits, Ontario's apples for export winning in the first class. Canada was only awarded one grand prize for its installation and one grand prize for the collective exhibit of fruits. Not the least mention was made of the growers who sent the fruits. This is not very encouraging. The commissioners refused to make entries for provinces, horticultural societies, or growers. They said that it was a Dominion not a provincial exhibition, and one even said, were he pressed to act otherwise, he would resign his position.

Shall the fruit growers of Canada unite to force the federal authorities to have their merit recognized at future international exhibitions? The subject should be discussed by fruit growers' associations. Our industry deserves as much advertisement as others and even more, considering all the difficulties caused by climate, insects and diseases. Every state in the union received hundreds of prizes. Entries had been made for each fruit grower exhibiting fruits. Compare our position with theirs. It is humiliating for us. It does not repay the trouble of the careful selection of fruit sent to St. Louis.

I think a great deal of The Canadian Horticulturist and would not like to be without it.—(W. M. Turnbull, Galt.

LINES OF WORK FOR HORTICULTURAL SOCIETIES

The matter of spending the society funds to best advantage requires considerable attention by the executive committees of the different horticultural societies. The best hints can be obtained by reading the reports from the most successful societies. The secretaries of many societies have sent The Horticulturist their views as to what work is liable to result in most good to the members and to the citizens. The distribution of seeds, plants and bulbs is recommended by all. All advise sending some horticultural paper to the members, and all except one prefer The Horticulturist. Garden and lawn competitions, flower shows, addresses by authorities on suitable and seasonable topics, and other similar lines of work are taken up by different societies.

The work done by the Deseronto society, and outlined and illustrated on pages 432 and 433 is worthy of emulation. The Stratford society has become famous for its annual exhibition. Guelph, Simcoe and a number of others have made excellent progress by working through the school children and in this way getting the parents interested.

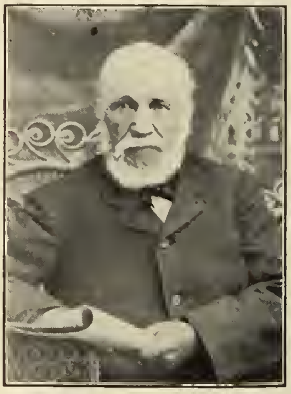
In different societies different methods must be adopted. The directors of the society should study what is most needed in their town and then decide what is the best and most satisfactory means of obtaining that need. If the lawns and front gardens are in poor shape, lawn competitions should give good results. If few flowers are grown, the distribution of seeds and flower shows might be most desirable. In most cases, however, energetic societies can manage to combine two or more features in one season. ,

In the past the good work of some societies has been detracted from by having fruit and vegetables shown with the flowers. In these cases trouble has been caused through the fruit and vegetable exhibitors having scoured the country to secure a collection of the best that could be found in order to win the prize. When prizes are not given the exhibitors are not encouraged to show crops grown by others, but many reports say that where money prizes are not given the same enthusiasm is not displayed. In some cases the absence of prizes has caused a dearth of exhibitors.

The secretary of a society in western Ontario which has been doing fine work for eight or nine years writes : " We hold a two-day exhibition of plants, cut flowers, fruit and vegetables each fall, at which premiums are awarded as stated in the prize list which is published in April or May. Competitions in gardens, in which the decorative effect from the street is made a leading feature, are held. and prizes are given for lawns from which fences have been removed, and for boulevards. Besides, each member receives seeds or bulbs, or both, with a request to exhibit flowers from them at next year's exhibition.

" These flowers are called for in the prize list and premiums are awarded. This year we are giving sweet pea seeds in six varieties and a parcel of mixed flowering tulips. The peas will appear in next year's prize list, and the tulips are a new departure that we expect will be appreciated. We also have had addresses on horticultural subjects.

" No charge is made by the society for the competition in gardens or lawns. Admission to the lectures is free and competitions are open to citizens. The exhibition has resulted in the most good, but all combined have helped to maintain a good, strong society."



A Grand Old Man.

Much of the success of many of the horticultural societies of Ontario, and incidently of The Canadian Horticulturist, is due to the untiring efforts of a few lovers of the beautiful in horticulture who, in spite of advancing years inclement weather, lack of enthusiasm on the part of the general public (and sometimes on the part of their own directors), refuse to be discouraged, and as a result of whose efforts their societies do splendid work each year. One of these enthusiasts is Mr. Joseph Barker, the secretary of the Kincardine Horticultural Society. Last spring The Horticulturist received a letter from Mr. Barker in which he stated that although 81 years of age he was tramping through the snow securing members for his society and readers for The Horticulturist. Such devotion to a society should encourage the secretaries of other societies, and explains, in part, why The Horticulturist is steadily increasing in influence. The illustration shows Mr. Barker. The Kincardine society has been in useful activity for about eight years. It was organized with only 15 members, at which time Mr. Barker was chosen secretary and treasurer. The society has 126 members, and Mr. Barker still serves as a most efficient officer in the same capacity as at the start. Mr. Barker has been the clerk of the Division Court at Kincardine for 40 years. He declares himself a lover of flowers from his oarliest recollection.

Mr. R. Walter Brooks, secretary of Brantford society, says : " Our socitey, had it continued only the old annual exhibition for fruit, flowers and vegetables, would have ended in complete failure. This year we had a new departure. In the first place we gave our members The Canadian Horticulturist, which I think is almost a necessity. Secondly, we distributed to the school children about 6,000 packages of seeds, consisting of asters, verbena, phlox, scabiosa and salpiglossis. Thirdly, we had a very successful exhibition. Mr. Hunt, of the O. A. C., Guelph, said it was the most beautiful lot of asters he ever saw.

" There were about 500 entries, for which we gave 119 prizes in plants, consisting of araucarias, palms, ficus and ferns. Each exhibitor also received a hyacinth bulb. Everything in regard to the exhibition was free and there was great enthusiasm among parents and children. It is great encouragement for us as we have had a hard pull to get members this year, but I have great promise for next year. People want to know how so much can be done for nothing. The only answer is, avoid unnecessary expense and purchase plants for prizes in the best market."

WHAT THE SOCIETIES ARE DOING

The North York Horticultural Society held an exhibition at Newmarket in conjunction with the York County agricultural show. Twenty departments were well represented. Entries in flowers totalled 197, while in plants there were 56 competitors, and in the children's department 223. The show was a decided success.

FINE SHOW AT HESPELER.

Good work has been done during the summer by the horticultural society at Hespeler. In the spring over 200 geraniums and coleuses were distributed among the school children, with the understanding that an exhibition would be given in the fall for the best plants. Interesting and practical instructions regarding the care of the specimens were given at that time by Mr. Wm. Hunt, of the O. A. C., Guelph. In reporting the exhibition Secretary Davis says that the quality of the specimens at the exhibition showed that these instructions had been well followed. About $50 were given in prizes and the plants were judged by Messrs. Bryce and Lane, of Galt. Four long tables were filled with plants, cut flowers and fruit, while many exhibitors had to place their entries on the floor.

In the evening Dr. A. Ochs called on Mr. Geo. Pattinson, M.P.P., president of Preston society, who declared the exhibition open, and pointed out some of the benefits of the society to the members and to the communnity.

The president, Mr. David Rife, presided at the evening program, when over 400 visitors enjoyed short addresses and vocal and instrumental music.

TORONTO'S OCTOBER MEETING.

A report from Mr. Chas. E. Chambers, secretary of Toronto Horticultural Society, states that an interesting meeting was held on October 3. "The fall care of plants" was taken up by Mr. E. F. Collins, and Mr. Herman Simmers gave an interesting and instructive address on "Bulb culture." A resolution was passed expressing sympathy with Mrs. Tyrrell and her family in the death of her husband, Mr. Edward Tyrrell, who was for many years associated with the society both as president and director.

PETERBORO'S COMPETITIONS.

The Peterboro society during the past season endeavored to encourage the beautifying of the home surroundings. Competitions were arranged for those who paid for all the labor, for those who paid for part of the labor, and for those who did all the work themselves. The taste and skill displayed has proved to be worthy of imitation and those who competed this year are benefactors to their fellow citizens. Barren and unsightly places have been changed into beautiful gardens. In awarding the prizes the judges did not place those which were most extensive first. Natural conditions were taken into consideration and awards were made according to the skill shown in working under adverse circumstances and producing good effects. The prizes were awarded as follows: Class I, all done with paid labor: A. L. Davis, 1, Hon. J. R. Stratton, 2; Mrs. Wm. Hamilton, 3. Class II, partly home and partly paid labor: Adam Hall, 1; Mrs. Kilgour, 2; Thos. Tucker, 3. Class III, all home work: Mrs. Thorndyke, 1; George Elliott, 2; James Stevenson, 3.

The energetic directors are planning for good work next season and have distributed 8,000 Dutch bulbs for fall planting and 7,000 tulips among the members of the society.

DR. J. S. McCALLUM.

The Smith's Falls Horticultural Society owes its origin and successful existence largely to the energy and work of Dr. J. S. McCallum, who has filled the position of president since the formation of the society, nine years ago. The Doctor is a many-sided man, and is chairman of the town's finance committee, and has served many years on the board of education, part of the time as chairman. The society has a membership of over 100 of the most intelligent people of the community, and is doing a good work. Some years ago the society induced the corporation of Smith's Falls to lease from the Dominion government a few acres of rough, broken land along the Rideau canal. This has been reclaimed, filled and made into a lawn, with shrubs, flowers, etc., furnishing a good object lesson in horticulture and an agreeable breathing place in summer for the citizens.

Is a Good Work.—To my mind, one of the best things any horticultural society can do is to get in touch with the principal of the public school in the town or district, and arrange with him for a distribution of plants among the school children, thereby getting the young people interested in flowers, etc. This is one of the best ways of bringing to the front the finer and better feelings in a person; the same applies to adults. The more a person studies flowers, etc., the more refined and considerate that person becomes.—(R. Davis, Sec. Hespeler Horticultural Soc.

Exporting Apples.—We are very often likely to taste an apple and say that is a good variety. It would take thousands of dollars to put some of our varieties on the market. I can mention a dozen varieties that are better than those we are placing on the English market, but it would take tens of thousands of dollars to place these varieties there. Shipping qualities should come first, then the keeping qualities, then the appearance and finally this last point that of its taste.—(A. McNeill, Ottawa, before Nova Scotia Fruit Growers' Association.

On one of the front pages of this number the Dominion Government officials who used the power sprayer furnished by The Spramotor Company, of London, Ont., during the past season have endorsed this power sprayer. The machine was operated in Nova Scotia by Mr. G. H. Vroom in demonstration spraying. Not a day's work was lost and there were no complaints on account of want of power.

THE ONTARIO HORTICULTURAL EXHIBITION

Final preparations for the Ontario Horticultural Exhibition which will be held in Massey Hall, Toronto, November 14-18, have practically been completed. Everything indicates that this year's exhibition will be much ahead of the one held last year, in the number and quality of the exhibits, as well as in the attendance. The prize lists have been increased, and this year there will be an exhibit of vegetables in addition to the fruit, flowers and honey.

Massey Hall, where the exhibition is to be held, lends itself admirably to decorative effects. A committee has been at work for some time planning the arrangement of the exhibits, with the result that the hall should present a very attractive appearance at the time of the show. Exhibits of flowers will be made upstairs and down, while the commercial exhibits will be shown in the basement. There will be the same special features there were last year, including cooking demonstrations by members of the Women's Institutes, fruit packing demonstrations by the Dominion Department of Agriculture, special exhibits by the Ontario Fruit Experiment Stations, and by the Central Experimental Farm at Ottawa, a special exhibit by the Guelph Agricultural College, and other features of this nature.

One of the pleasing parts of the floral section will be a competition for the best decorated dinner table. Some of the exhibitors purpose making a great display of cut glass, silver, china, etc., and it is anticipated the value of these exhibits will amount to thousands of dollars. In the fruit department, one of the most interesting features will be the exhibits by the cooperative fruit associations throughout the province. An evidence of the great interest taken in the show is afforded by the fact that nine county councils have made special grants to encourage exhibitors from their counties. All the fruit shown at Simcoe will be exhibited at the Toronto Exhibition.

As was the case last year, a special feature of the exhibition will be the various conventions, four of which will be held. These include the convention of the Ontario Fruit Growers' Association, which will take place Tuesday, Wednesday, Thursday ; the first convention of the Ontario Vegetable Growers' Association, which will be held Thursday and Friday, and the convention of representatives from the horticultural societies in the province, which will be held Friday. At this latter convention the formation of a provincial horticultural association will be considered.

The main features of the fruit growers' program include a directors' meeting, Tuesday afternoon, a public meeting Tuesday evening, at which the Hon. Nelson Monteith, Minister of Agriculture, the Hon. Sydney Fisher, Dominion Minister of Agriculture, and A. M. Brown, of Wyoming, Delaware, will be the principal speakers. On Wednesday morning the president's annual address will be given, after which general business will be disposed of. In the afternoon the report of the New Fruits Committee will be considered. Mr. Harold Jones, of Maitland, will speak on "Selection of Sites for Orchards." Mr. G. C. Caston, of Craighurst, and Mr. W. T. Macoun, of Ottawa, will speak on "The Effect of Manuring on Hardiness for Northern Districts;" Mr. J. G. Mitchell will speak on "Plums," and an address will be given by Mr. L. Woolverton. Wednesday evening the Transportation Committee will present its report and Mr. A. M. Brown, of Delaware, will speak. The meeting Thursday morning will be devoted to the consideration of matters that will come before the Dominion conference of fruit growers. At the afternoon session Prof. F. T. Shutt, M.A., will speak on "Fertilizers for Orchard Crops," and Mr. Robt. Thompson will give the result of the fruit shipments to Winnipeg.

One of the most enthusiastic workers in Ontario in the cause of horticulture is Major H. J. Snelgrove, M. A., of Cobourg, who for ten years has been the secretary of the Coburg Horticultural Saciety. Major Snelgrove is the chairman of the committee appointed at the time of the Ontario Horticultural Exhibition last year, to consider the advisability of forming a provincial horticultural association and to suggest changes in the Act governing the horticultural societies of Ontario. This committee will present its report at the convention of delegates from horticultural societies which will be held Friday, November 17, at the time of the Ontario Horticultural Exhibition. It is men like Major Snelgrove who are making a success of the work of our horticultural societies.

The Vegetable Growers' Association will listen to addresses by Professors Lochhead, Harcourt and Zavitz, of Guelph ; Mr. J. L. Hilborn, of Leamington ; Mr. W. C. McCalla, of St. Catharines; Mr. John Hyatt, of Westlake ; Mr. R. Brodie, of Westmount, a speaker representing the Canadian Canners' Association, and a speaker from the United States. The arrangement of the program has not been finally completed, but will be shortly.

The Horticultural Convention will be held on Friday. An effort is being made to induce the various horticultural societies to run excursions to Toronto. At the morning session the advisability of forming a provincial association will be discussed, and there will be addresses by officers of horticultural societies regarding the best methods of work. In the afternoon the principal speakers will be Mr. Wm. Hunt, of Guelph, and Mr. W. T. Macoun, of the Central Experimental Farm, Ottawa.

Useful Information.—The lover of beautiful gardens and those who appreciate fine house plants should secure one of J. A. Simmer's latest seed catalogues. The annual autumn catalogue published this fall is replete with illustrations and gives a full description of pot plants for indoor culture, and desirable spring flowering bulbs. Hardy perennials and annuals which may be planted or sown in the fall, ornamental shrubs, and garden tools and requisites fill up the back pages. It is free and worth writing for.

VEGETABLE GROWERS AND THE TARIFF

The Ontario Vegetable Growers' Association has definitely decided to have a deputation wait on the tariff commission, when it sits in Toronto, to ask for a change in the tariff on vegetables. The case for the growers will be presented by the Hon. J. W. St. John, M. L. A., and by Mr. A. Campbell, M. P., who will be supported by such well known growers as Messrs. W. A. Emory, of Aldershot, president of the Ontario Vegetable Growers' Association; W. H. Bunting, of St. Catharines ; A. McMeans, of Brantford ; J. L. Hilborn, of Leamington ; a representative of the Toronto Vegetable Growers' Association, and by other leading growers.

During the past six weeks the secretary of the Ontario association has been in communication with the Departments of Trade and Commerce in Canada and the United States with the object of ascertaining the position of both countries in regard to the tariff. The information gained has been laid before the branch vegetable growers' associations throughout Ontario, each of which has been asked to prepare a statement showing the changes its members would like to see made in the tariff. A meeting of a special committee, appointed by the president of the Ontario association, to consider the replies from the branch associations and to adopt a line of action before the tariff commission, was held recently in Hamilton. Those present included Messrs. W. A. Emory, of Aldershot, the president ; E. J. Mahoney, of Hamilton ; A. McMeans, of Brantford ; F. F. Reeves, of Humber Bay, and the secretary of the Ontario association. The reports from the branch associations throughout the province showed that the growers feel they would have no cause for complaint were there free trade between the United States and Canada. As it is, however, the United States tariff is much higher on several lines of produce than is the Canadian tariff, which is felt to be a great injustice. It was decided, therefore, to make the cry of the association " Free trade or an equal tariff."

The need for an increased duty on several lines of vegetables, such as asparagus, green beans and watermelons, was realized, but owing to the fact that the number of growers producing these vegetables is limited, compared with the large number of people who consume such vegetables, the committee decided that it would be best to ask for an increase in the duty on only those vegetables which are the most largely produced in Canada and on which the United States competition is the most keenly felt. These include cabbages, cucumbers, celery, onions (dry), potatoes and tomatoes. The duty to be asked for on each of these vegetables was decided on. In no case will it be higher than the United States duty on similar lines of Canadian produce entering the States. In the case of cucumbers and tomatoes it was decided to ask for an ad valorem duty, but to stipulate that in no case will an invoice be accepted if marked, in the case of cucumbers, at less than 25 cents a dozen and in the case of tomatoes at one cent a pound.

It was decided not to ask for a duty which would prevent the importation of these vegetables into Canada, but which would be enough to prevent their being slaughtered on the Canadian markets at prices below the cost of production on this side of the line. The duty to be asked for will not be published until the tariff commission meets.

THE FRUIT SHIPMENTS TO WINNIPEG

The shipments of fruit to Winnipeg made by a few of the members of the St. Catharines Cold Storage Co. are still going forward at date of writing, October 25, at the rate of two cars per week, but they will end by the last of the month. The detailed statements of individual sales are not to hand for a number of the last cars, but the prices the fruit sold for are received twice a week by wire. The shippers have sifted down to about eight, who have stuck to their guns and have unbounded faith in the final result. Details will have to be held over until next month—but the shippers are unanimous in expressing the opinion that only cooperative associations can successfully hope to compete in the Winnipeg market.

Were the small shippers who forwarded fruit in the early cars without experience asked as to their opinion and the prices they received they would be very apt to say that the Winnipeg dealers are a set of thieves, but those who have stayed by the shipments throughout say unhesitatingly that the prices obtained are better on the whole than those paid on the Ontario markets, and so they should be, as more pains in packing are necessary, as well as in selecting the fruit. The point they feel the most satisfied over is often overlooked by the ordinary shipper, and that is that the 30 carloads of fruit were kept off our own markets and thus helped to stiffen prices instead of to depress the Ontario market.

At the beginning of the season two or three of the shippers commenced to wrap and box their pears. They have kept it up and are now sending from 100 to 250 boxes in each car. These boxes are packed equal to the best Californias, and what is more satisfactory the prices received have paid the shippers well for their time and trouble. The boxes used are the American and British Columbia pear boxes holding 40 or 42 pounds of pears net, or 45 to 47 pounds gross. This box can be packed much better and more easily than the half case. The cost of wrapping and paper costs about 10 cents per box. The Ontario cars are now being looked for on sale days in Winnipeg, and the class of buyers is improving. The Department of Agriculture at Ottawa has been placing thermographs in the majority of the cars, and the records, with two exceptions, have been very satisfactory. In the case of the exceptions the fruit was placed in the car warm on a day when the temperature outside was about 90 degrees. One carload was placed in storage over night and cooled to 42 degrees. The thermograph started at 45 degrees and dropped the first day to 42 degrees and remained there for 36 hours and then advanced to 50 degrees for nearly two days, and finally dropped to 42 degrees, where it remained until the car was opened. Very good time has been made by most of the cars, about five days being the record. Five cars of different makes were tested as refrigerators and five also as ventilators. Three or four men have accompanied these cars. The last to go (on October 18) was Albert Pay, whose car arrived in Winnipeg October 23, or in less than five days. When these men all return a meeting will be called at the Cold Storage Company's office and the railway men will be invited to attend, when these men will present their reports.

HINTS FROM A BRITISH IMPORTER

During October Mr. Joel Goodwin, one of Manchester's leading fruit dealers, visited Ontario and incidentally studied fruit conditions. "In Canada," said Mr. Goodwin to The Horticulturist, "only fruit that will ship well should be grown. Colored fruit sells better than uncolored. The Englishman wants something showy and will take a variety that is highly colored although the quality is not so good. It seems to be a hard matter to teach Canadians to pack properly. Many of the packages, when they reach Great Britain, appear to have been put up by persons who had never seen packing done properly. The proper way is to have some man who understands packing do it all. There is no use trusting the average farmer to do it.

"The greatest satisfaction is given by the Canadian barreled fruit. The packing is done better, and boxed goods do not sell so well on our market. Two years ago when barrels were scarce in Canada and boxes were sent it was difficult to make sales. Many of the boxes were weak and spread enough to allow the fruit to become slack. Besides, barrels arrive in better condition, as their shape leaves space between them for ventilation during transport. Cold storage is necessary for the boxes and that entails extra expense.

"I usually get my supply of apples by consignment, but have had some sent direct from the growers. The dealers are better informed as to market conditions and understand the business better than the average producer. Selling fruit is a business distinct from growing, and as a rule the farmer is willing to sell at a paying price if he has no risk to run.

"Better steamship service is needed between Canadian ports and Manchester. Our merchants could handle 15,000 or 20,000 barrels a week if the steamers would bring them. We must have a weekly service, and if the Manchester lines cannot give it I may put on some steamers myself. The very best boats, fitted with cool chambers, are needed for the apple trade. The steamship companies claim that there is no money in carrying freight, but if the best boats were put on more trade would result and then it would pay."

More Cars Demanded

Owing to the great scarcity of cars for handling the late crop of tender fruits and the bulk of the apples, a meeting of the transportation committee of the Ontario Fruit Growers' Association was held in the Grand Union Hotel, Toronto, on October 16. Messrs. W. H. Bunting and Robt. Thompson, of St. Catharines; E. D. Smith, of Winona; W. L. Smith, H. W. Dawson and P. W. Hodgetts, secretary of the Fruit Growers' Association, discussed the situation. Great losses have resulted to several shippers. It was estimated that there would be 300,000 barrels awaiting shipment within three weeks, and owing to the millers asking for cars to bring wheat from the west for Ontario mills the shortage in rolling stock was likely to become serious.

The committee considered that since fruit was a perishable product and apple shippers were paying a higher rate for their shipments special efforts should be made to aid the fruit men at this critical time. It was decided to ask the Railway Commission to compel the railways to give preference to the shipments of apples until the congestion has been relieved. A petition to this effect has been sent to the commission.

Packed When Green

A. McNEILL, CHIEF, FRUIT DIVISION, OTTAWA.

Mr. J. J. Philp, Dominion Fruit Inspector, Winnipeg, notes the especially large quantity of Fameuse apples arriving in bad condition, and attributes this to the fact that these apples have been packed on the green or somewhat immature side. A large quantity of fruit has arrived at its destination in a wasty condition this year as the result of its being shipped while yet immature.

The idea that fruit must be packed green to ship and keep well is so strongly intrenched in the public mind that it will take much time and patient teaching to eradicate this erroneous impression. Scientific experiments, undertaken for the purpose by the Department of Agriculture at Washington, D. C., have shown that to keep and ship well, fruit must be just mature but not over ripe. Green fruit spoils as readily as over ripe fruit. Mr. Philp's reference was specially to Snow apples. The Fruit Division, Ottawa, gives it as the experience of its inspectors that these apples cannot be shipped profitably in barrels. They must be classed as a tender fruit, and the box is the largest package that should be used for them.

Results of the Windstorm

The worst storm that has struck Ontario orchards for a great number of years occurred during the third week of October. Fruit Inspector Carey, of Toronto, who recently visited Northumberland county, states that the growers there claim that 50 per cent. of the fruit on unpicked trees had been blown down. Mr. Carey estimated that 30 to 40 per cent. had fallen. The ground was literally covered with excellent fruits and gangs of pickers gathered them like potatoes so that they would not be further damaged while the remainder of the crop was being harvested.

All this fallen fruit will be rushed on the market or put in storage and in either case the result will be serious if the fruit men do not act with prudence. Windfalls do not give satisfaction in store, and if rushed on the market a glut will be caused. Some fruit which fell on soft ground was not seriously damaged and appears all right, but the consumer is dissatisfied when a bruise is found. "This storm and the effects which are likely to follow," remarked Mr. Carey, "are the only drawbacks to a prosperous year for fruit growers."

Mr. Carey advises that special care be taken in selecting apples that are to be shipped. A few of the least damaged can be shipped with fair success, but the badly bruised fruit should be sent to the evaporator. Naturally, the grower is anxious to send all he can at higher prices, irrespective of the damage to the fruit industry, but in this case he must act prudently.

Fraudulent Packing

A number of cases of fraudulent packing have been reported from different sections of Ontario. In a recent interview with Dominion Fruit Inspector Carey, The Horticulturist learned that cases were under consideration at St. Catharines, Aldershot, Oakville, Meaford and other places. Several growers have been prosecuted and fines imposed on the transgressors. Mr. Carey favors lenient treatment but claims that the educational stage is past and those fruit growers who persist in violating the law can expect little consideration in future. They have been given time to acquaint themselves with the requirements and heavy fines will be imposed.

A marked improvement in packing is reported, as the majority of growers are cooperating to bring the desired results. There are, however, some unscrupulous packers who have not the best interests of the fruit industry at heart. The principal defects have been over facing and wrong marking. In several cases XX fruit has been marked XXX. "We must," said Mr. Carey, "have honest packing and grading up to the standard."

Fruit Inspector Carey states that fully 200,000 barrels of apples will go into storage in Northumberland county. These will consist chiefly of Spys, Ben Davis, Baldwins and Russets.

Cool Fruit Before Packing

A. McNEILL, CHIEF OF THE FRUIT DIVISION, OTTAWA.

The Dominion fruit inspectors at Montreal draw attention to a most serious source of loss to apple shippers. When inspecting fruit under the Fruit Marks Act they also test it with a thermometer for the purpose of arriving at some knowledge of its condition. There are numerous cases of the fruit standing at 75 to 78 degrees in the barrel when the outside temperature is between 50 and 60 degrees. Such packages going into ordinary storage are almost certain to arrive in the Old Country in bad condition.

It mends matters somewhat to place them in cold storage, but even cold storage cannot restore to proper condition fruit that has been some days packed in a barrel at this temperature. The heat developed by the fermentation of the apples themselves would almost counterbalance the effect of the refrigerator plant, so that it is doubtful whether the centre of the barrel would be materially affected before the apples reached the English market. Our packers must learn that the apples should be put in the barrels cold, and that a barrel of apples, even in the cold storage chamber, cannot be cooled thoroughly in less than a week or 10 days. Hence, the necessity of cooling them before they are placed in the barrel.

Items of Interest

The British Columbia Fruit Growers' Association has decided to make a display of fruit again this year at the annual Royal Horticultural Exhibition which opens in London, Eng., on December 5. Over 600 boxes of apples and about 100 boxes of pears are being selected from the crop in the different sections of the province. The British Columbia exhibit was awarded two gold medals last year.

The largest cargo of apples ever exported from Montreal left on October 6 on the Allan liner, Bavarian. This record load consisted of 28,560 barrels and 765 boxes. The inspector from the Department of Agriculture had a busy time looking after proper marking and taking the temperatures. Each package was clearly marked "Canadian apples."

Reports from different parts of Canada tell of freaks in fruit trees and bushes this season. In Mr. W. G. Watson's orchard, at Dixie, a bunch of healthy blossoms was found within a few inches of mature fruit. In Dufferin county Mrs. Thos. Hinton, sr., of Black's Corners, picked well formed strawberries of splendid flavor in October. A second crop of raspberries matured on some bushes in Mr. Jos. Chantler's garden in Simcoe county. At Peterboro, Mr. Robt. Daly also picked ripe raspberries in mid-October.

The interests of the fruit industry are being looked after by Inspector Gifford, who laid charges against Messrs. Godfrey, Dyce and Ellis, of Meaford, for violation of Section 6 of the Fruit Marks Act. Mr. McNeill, Chief of the Fruit Division, Ottawa, in reporting that these men were convicted, says that present demand points to bright prospects for a large and permanent trade for fruit that can be shipped through Georgian Bay ports to the Northwest and that it is not in the interests of the fruit growers to have this trade jeopardized by carelessness or fraud on the part of a few packers.

Fruit Notes

It has not been definitely decided when the Minister of Agriculture will call the Dominion Conference of Fruit Growers, but presumably it will be some time in February or early in March. The delegates will be called from the different provinces in about the following proportions: Prince Edward Island, 2; Nova Scotia, 4; New Brunswick, 2; Quebec, 4; Ontario, 9; Manitoba, 1; Saskatchewan, 1; Alberta, 1; British Columbia, 4. In addition, it is probable that there will be one fruit expert representing the provincial government and provinces interested. The secretaries of the different provincial fruit growers' associations have been notified, so that should there be any subjects on which they would like to instruct delegates they will have an opportunity of doing so at their annual meetings.

Mr. Maxwell Smith, Dominion Fruit Inspector for the Province of British Columbia, writes that a very large proportion of the apples arriving from southern points up to date this season have been condemned for codling moth. Scarcely a year passes but Ontario shippers are induced to send apples to British Columbia, and it very seldom happens that these apples successfully pass the pest inspectors, which, of course, entails a serious loss upon the shippers. It is necessary, to enter British Columbia, that the fruit be absolutely free from codling moth, a condition that can scarcely be met in ordinary years by Ontario fruit.

Record time was made in the shipment of fruit made recently by the St. Catharines Forwarding Co., which Mr. P. J. Carey accompanied to Winnipeg. The trip from St. Catharines to Winnipeg was made in four days and 20 hours. The shipment consisted of pears, peaches, grapes, tomatoes and a few apples. Mr. Carey reports that everything was in good condition on arrival and encouraging sales were made. It was the first shipment of peaches for the season. They were somewhat immature but sold readily at $1.25 a case. With care and fair transportation facilities, it is claimed the most tender fruits can be put on the Winnipeg market and sold at a profit in large quantities. Defective packing and improper selection are said to be the chief causes of the slow progress in bringing the merits of Ontario fruits to the front.

The blueberry crop in the neighborhood of Kenora (Rat Portage) amounted this year to about 155 tons, the price varying from 7 to 10 cents per pound.—(A. McNeill, Fruit Division, Ottawa.

Mrs. W. Keith, of Newmarket, who recently purchased bulbs to the value of $1.12 from J. A. Simmers, of Toronto, through seeing Mr. Simmers' advertisement in The Horticulturist, has been sent a handsome premium by The Horticulturist. We give premiums to all our readers who purchase from advertisers.

The Tomato Situation

The Grantham vegetable growers held a special meeting on October 14 to take action on the tomato situation for the season of 1906, as some of the factories try to secure contracts when paying the growers off at the end of the season. A large number of growers were present.

The results of this season's work were considered and all were unanimous in agreeing to stick together. A committee was appointed to keep in touch with the situation and be prepared to take any needed action.

A Secret of High Prices

E. H. WARTMAN, DOMINION FRUIT INSPECTOR, MONTREAL.

Canadian fruit growers should know a few facts relating to the transportation of California plums via Montreal to Glasgow. I had the pleasure of inspecting five standard three-box crates California Tragedy plums out of a car of 1,130 crates. Each plum was well wrapped in soft paper, well graded as to size and quality, three plums deep. After inspecting these five crates to the bottom I decided they were in perfect condition.

News of this kind to shippers serves as a warning to those who have the very responsible position of looking after the temperatures of these chambers aboard ocean liners. A shipment went forward last season and landed in such perfect condition that the fruit demanded 10d. or 20 cents per pound over the counter. This fruit usually sells for one cent per pound or 60 cents per bushel in California. When we consider 20 cents per pound, or $12 per bushel on the other side, it is evident some one must be reaping a great harvest. But the little secret should be better known among our growers. The fruit is picked at the proper time and most beautifully wrapped and packed. It is placed in cool air and kept there to its journey's end. All this may seem a lot of trouble and expense, but it is a most perfect system, and he who practices it will be well remunerated.

I like boxes very much, and think them a better package for early apples than barrels. I think too that the best winter apples should sell to better advantage in boxes, but the old country trade seems prejudiced in favor of barrels. —(R. A. Thomas, Barrie, Ont.

I enjoy The Horticulturist very much and do not wish to discontinue it—(Adam Brown, Annan, Ont.

COMMISSION SALES IN GREAT BRITAIN

A CANADIAN IN ENGLAND.

While I do not believe there is as much fraud connected with the sale of Canadian apples in British markets as has, sometimes, been charged, still I believe there is considerable fraud. Openings for such are evident, even though many firms are quite too honorable to take advantage of them.

I advise Canadian growers to have a Canadian, preferably one of themselves, to represent them in England. Such a man might confine his attentions to Liverpool and endeavor to certify the correctness of Liverpool returns, or he might have a roving commission, with authority to see books of any brokers whose returns are questioned by the shippers. Brokers would, no doubt, be quite willing to agree in advance that their books should be open for inspection by any accredited representative of the shippers. The idea is capable of elaboration in many ways. As far as engaging a man over here to influence the bulk of the sales is concerned, I cannot see any necessity for outlays on the part of Canadian growers for such a purpose. If the fruit is carefully put up on the cooperative principle, so that large lots of any given variety and grade will turn out uniformly, barrel after barrel, the demand will not only be easily found, but is already waiting.

To put it briefly, the goods will sell themselves if they are right, and what the Ontario grower wants is the assurance that he will get all the fruit produces, less actual and necessary expenses for freight, dues, and commission. It must not be difficult for the growers to get transportation on extremely easy terms for one or two representatives, whose expenses for say one month, November 15 to December 15, would be a very small matter in comparison with the sum that would be required to keep a man employed over here by the year.

SPRAYING COMPETITION CHALLENGE

W. H. BRAND, GRIMSBY, ONT.

In your issue for October 1 find some representations which, in the interests of both the purchasing public and ourselves, require correction. They are found under the headings "Spraying machines at Toronto," "Little Giant Sprayer," and in the advertisement of their manufacturers. They are: "Besides being the cheapest machine on the market, it is also the only one that automatically sprays two rows of grapes as well as small fruits at the same time. These machines are now in perfect running order, having long since passed the experimental stage. Fruit growers may feel assured that they are obtaining the best when they purchase a Little Giant Sprayer. Mr. E. D. Smith is using one of their sprayers and does not possess one of the Spramotor machines. This sprayer is the most complete machine on the market. Unreliable agents tell you they sell a machine just as good, but don't be deceived; buy a Little Giant which has stood the test on many large fruit farms during the past summer and has never been known to disappoint. The Little Giant is a Canadian made machine that many try to imitate but have not succeeded," etc.

Now, as Wallace Power Sprayers and myself appear to be directly included in these sweeping assertions, I deem it well within my right to draw attention to the positive facts and prevent the uninformed from being "deceived" by such statements and place them on the correct basis to judge which make of machine produces a correct spray, enough of it, holds it long enough to do thorough work at each stop, is the most economical in the use of mixtures, produces the most paying results, requires the least expenditure for help while in operation and would really be "the cheapest" for them to invest in.

A proper spray is one composed of very fine, mist-like atoms not coarse (like that commonly called a "Scotch mist"), and is one that will not drench the foliage to the dripping point when applied from nozzles passing by at a reasonable walk. If it be too coarse it will gather in drops and carry with it the very ingredients desired to deposit. The same thing results from directing even the finest spray too long in any one spot. In doing this it carries with it components such as Paris green, which is not perfectly soluble in water; blue vitriol, white arsenic, etc., as these remain in a very fine but heavy powder. A proper spray, properly applied, is no heavier than an ordinarily light dew on the foliage. To obtain this proper spray we require machines capable of generating very high pressures—as high as 200 pounds sometimes—and furnishing enough volume of spray to accomplish thorough and speedy work in whatever we are spraying. Not only so, but, as we sometimes find it absolutely necessary to halt at a tree in order to finish it thoroughly, or, on account of using extension rods have to make a stop at each tree, we must have a reserve force and extra room for the storage under that force of sufficient mixture to do the work required. In the most economical of power sprayers, this force is compressed air—a quantity which is free to all and only requires placing in proper shape to do many things other than apply the brakes on railway cars. This is the agent employed in Wallace machines, and in most of them it is got by power from the wheels or axles of the vehicle that carries the outfit as the horses (or horse) draws it along. Our pumps are made finely enough to compress air to 40 or45 pounds pressure without the use of liquid. After we get the required amount of air to do the work contemplated, we turn the suction on liquid and run up a pressure of 200 pounds if it is required. (Most people run between 70 and 160 pounds.) The length of time we can stand and spray depends on the size of the machine and the number of nozzles being used. The way to judge which of these machines will best perform the work is to be governed by the verdicts of users of them, or those who see both makes in actual operation.

To decide which is the cheapest is to learn which is most capable of making the covering capacity of the mixtures the greatest, accomplishing the greatest amount of work in the shortest time (thus reducing expense for time of help and team) and with the smallest amount of help, and then take into account their original cost and make comparisons. When this has been done correctly the point of which produces the most paying results will have been met and decided.

First, let me inform every reader of this article that Wallace Power Sprayers are not in the same class as the Little Giant. They are strictly air compressors, and are the only machines of that class now being sold or extensively used in Canada or having a resident representative here. They are leaders, and are so far ahead of such combinations as the Little Giant that the latter will have a long lap to cover in catching up. I intend to use, as much as I can, Canadian made trucks and tanks in mounting the 4-wheelers, and to make here in Canada many of the attachments for their various uses. We furnish these in sufficient variety to enable our customers to spray most thoroughly two grape row sides "at the same time" (this has been done by some of them with my own make of grape spars on the "Standard" machines during the past season, and I am credited with having the best design extant. I intend to further improve it for next year's work), or two rows of anything else that grows in the bushy row form, or four rows and upward of strawberries, potatoes, tobacco, etc., or twelve feet and upward in width when spraying to kill mustard, etc., and tree spars, which make it possible for one man to handle both the levers and spar and thoroughly spray largest apple trees without halting from start to finish of each row in doing the work. All he requires is a boy to drive the team for him. We design our own fixtures and improve them as we find necessary or of use to our customers. We will also get up for them any special arrangement of nozzles their work demands, and we guarantee every machine.

The Little Giant has not, and never had anything worth our while to attempt to copy or "imitate." My opinion is that this boot is on the left foot. At some of the fairs at which both of us were present I found this man making very close examinations of our "Junior" and "Duplex" machines. As these machines and their various improvements are protected by patents I trust his rashness will not lead him into attempting to adopt some of our patterns. The demand for Wallace Power Sprayers is such that the company have had to buy more yard and store room and enlarge their factory to cover one acre more.

Regarding Mr. E. D. Smith, let me say that he not only possesses a Little Giant, but also a Spramotor and a Wallace "Standard." He uses the first named for nursery stock only, the Spramotor for vineyard work, and the "Standard" for all his heavy orchard work, of which he has a sufficient acreage to keep it steadily going during the spraying season. On receipt of request I will forward any of your readers a 20-inch circular on which will be found Mr. Smith's commendations of our machines and those of a number of others who own and use them here in Canada and some in the United States. On it, also, will be found a number of hard facts regarding our machines and other useful information along the same line. A postcard will bring it.

Regarding Toronto Fair. I happened to be a visitor there and saw other power sprayers than the Little Giant, and when I passed both exhibits the other exhibitors seemed to have "won more friends" by three times the number I saw around the latter. To a group of my acquaintances who interviewed the Little Giant man, he stated that a Mr. Orr said that he would give his present possessions in the line of sprayers for a Little Giant. My query is why he did not make the deal. Let us see. Mr. Orr and Mr. R. H. Dewar own both a Spramotor and a Wallace "Standard." (In my circular will be found an extract from their letter also.) Are we to infer that this man considered these machines too risky to venture his cash in? Here is Mr. Orr's reply to my questions regarding this: "It is utterly false. I made no such offer to any one; I am not quite so foolish. It is the veriest nonsense. It occurs to me that I met this man on the car one day and he gave me a glowing representation of the capabilities of his machine, the correctness of which I have yet to see verified. I may have said that I would give a good deal for a machine that would do all that he claimed for his, but I made no offer whatever. I have yet to be convinced regarding his machine." My own personal opinion leads me to view him as leaning too readily toward this style of talk. It is also strengthened by the fact that I personally overheard him making use of a statement in a manner calculated to make a most damaging impression regarding our machines, and my advice to him and the writer of the statements herein complained of is to comb down somewhat and be content with plain modest truth in regard to his representations of both his own and other makes of machines even if he does not wish to accord toward the latter the spirit of common fairness nor cares how he jeopardizes his own public reputation for veracity and the common self-respect possessed by all honorable dealers in so doing. In so far as I am personally concerned, his blusterations carry no weight nor cause me the least concern, because I am too well aware as to how much he knows about the whole spraying business, and how much he has yet to learn regarding it. I also estimate that the majority will very quickly learn the same things.

My object in dealing at all with this matter is as at first stated—I do not care to see the uninformed "deceived." I will give this man an opportunity to demonstrate the correctness of his representations on or before November 15 at some place in the Winona vicinity to be agreed upon, he to name the date and invite (through the press) all who are interested in these machines or sprayers of any make for any rural purpose. He may cover the whole of Canada if he chooses. He may also have a committee of judges if he wishes, either two or five. He to name one or two and I will do likewise and these can select the other man.

Readers of The Horticulturist will then have other than the writings of the Little Giant man as authority on which is "the most complete sprayer on the market;" learn if "it has enough power;" possess from an actual demonstration the "proof of the superiority" of the machine which gives the evidence that it possesses it; learn whether it has or has not "long since passed the experimental stage;" see for themselves the "test" and judge whether or not they would be "obtaining the best when they purchase a Little Giant Sprayer," or whether all these are better embodied in Wallace machines. At the same time I would show them a cart-machine that will surprise them when they see its power and scope. I will also lend to any inquirer after information regarding spraying and spraying apparatus, my services, and will be impartial in giving any desired answers. I invite closest investigation of our system. Instead of giving only three names out of the "many" regarding the "sprayer which has stood the test on many large fruit farms" (? these are the only ones I can find), I will give a whole list of them regarding Wallace machines and get as many more, if wanted. We do not write our own testimonials, nor accept or publish any unless dictated by the individual whose authority is subscribed. How about the Little Giant? If my challenge is accepted please advise at earliest possible date, as I wish to plan to be on hand.—Advertisement.

Has a Spramotor Machine

In the October issue of The Horticulturist appeared a statement regarding the Little Giant sprayer, in which it was stated that Mr. E. D. Smith, of Winona, does not possess a Spramotor machine. We have since been informed by Messrs. Perkins & Paine, of Port Dover, that what they desired to have published in The Horticulturist was that Mr. E. D. Smith does not possess a power spramotor machine.

We are informed that Mr. Smith has both a hand and a horse-power Spramotor machines, purchased last season, and that these machines have been giving every satisfaction. We published the item in good faith and take pleasure in making this correction.

Cheap Offer of Surplus Bulbs

In order to quickly dispose of any bulbs left after filling our orders, we offer them to our patrons in the form of a Surprise Collection, worth at catalogue prices two or three times the price charged in this way. We shall make them up into generous assortments, well selected, and all of good, sound bulbs, but the **choice must be leftstrictly with us.** Customers will, however, be allowed to indicate a preference, and if the bulbs requested are still in stock, it will be complied with. These collections, which may be had for either House or Garden Culture, will not be filled before Nov. 5th, but orders will be booked at any time before that. No selection will be made for less than $1.00, but orders for any larger amount will be filled in the same liberal manner. We pay the postage. Much more liberal collections can be sent when ordered by express.

70 SHRUBS -- 95 PERENNIALS

In our Fall Catalogue, we offer the above number of varieties, all hardy for planting at this season of the year. You will not find this list equalled by any firm in the Dominion. Don't put off planting any longer.

THE WEBSTER FLORAL COMPANY, LIMITED
FLORISTS, NURSERYMEN AND SEEDMEN. HAMILTON, CANADA.

The Price of Fruit

L. WOOLVERTON, SEC'Y OF ONTARIO FRUIT STATIONS, GRIMSBY, ONT.

Supply and demand must always regulate the prices of fruits, providing the sale is regulated by business methods. We owe much to the commission man in the larger cities, for when we have an over production how else can we force quick sales? The fault has been in shipping on commission or auction, to small outside towns, in competition with the bulk of our own fruit going to the cities. In such places f. o. b. sales should always be made, otherwise the prices for our whole crop are lowered. Here is the secret of our recent failures, and nothing could be more foolish and unbusinesslike.

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion; minimum charge, fifty cents in advance.

WANTED — SUBSCRIPTION CANVASSERS for The Canadian Horticulturist both in cities and in the fruit districts of Canada. Liberal commissions offered. Good men soon put on salary. Write The Canadian Horticulturist, Rooms 507-508, Manning Chambers, Toronto, Ont.

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GRIMSBY

Drawings made to a scale, so that any gardener may carry them out. Correspondence solicited.

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The salt must be pure—like Windsor Cheese Salt.

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The salt must not be carried off in the whey—but stay in the curd, like Windsor Cheese Salt.

The salt must help to preserve the cheese, and keep it smooth and rich — like Windsor Cheese Salt.

If you are not getting as good cheese as you should, would it not be a good idea to try

Windsor Cheese Salt.

IT PAYS

to grow good fruit, and every grower wants

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We carry a full line of the very best nursery stock,

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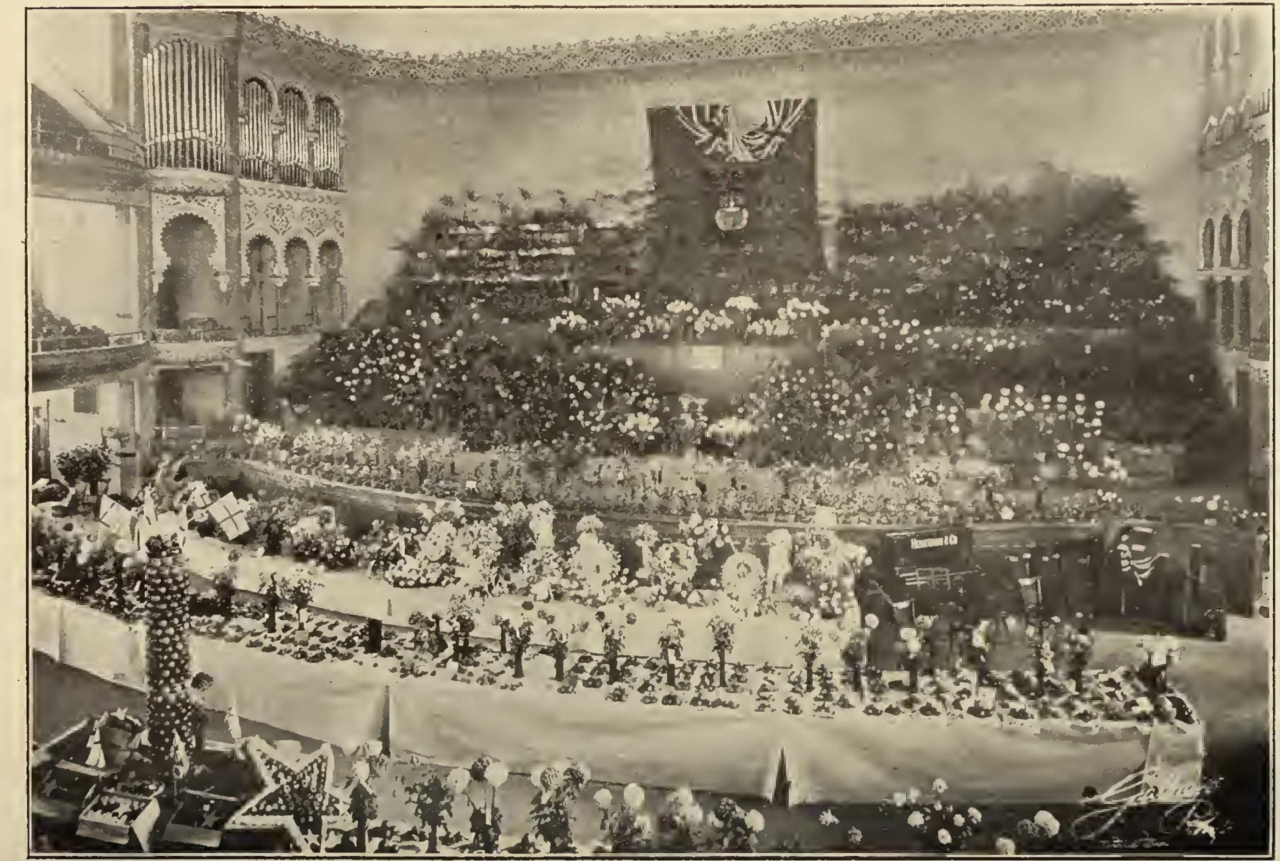

This Illustration Gives a Slight Idea of One of the Views at the Recent Ontario Horticultural Exhibition

The Canadian Horticulturist

DECEMBER, 1905

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THE ONTARIO HORTICULTURAL EXHIBITION

GREAT was the success of the second annual Ontario Horticultural Exhibition held in Massey Hall, Toronto, November 14-18. The total number of entries was more than double the number made last year, and the interest shown in the exhibition was much more marked. This exhibition promises to become an annual event of national importance and will be of great value in advancing the horticultural interests of the country.

The exhibits of fruit were more than twice as numerous as last year and the quality was much superior. It was the best exhibition of the kind ever held in Canada. The display of flowers was a revelation. While the number of entries was but little larger than last year, the character of the blooms was much superior. Experts pronounced it the finest exhibition of flowers ever seen in the Dominion and one of the best ever held on the continent. This year, for the first time, prizes were offered for vegetables, and the results were most gratifying. Over 300 entries were made and the excellent quality of the exhibits and the attractive manner in which they were displayed made this one of the best features. The apiarists maintained the high standard of the exhibition by a very fine display of honey. As a combined show it is doubtful if the exhibition has ever been surpassed by any other ever held on the continent. When it is remembered that this was only the second attempt the splendid success of the effort will be realized.

The exhibition was formally opened on the afternoon of the first day by Hon. Nelson Monteith, Minister of Agriculture, who showed clearly that he realizes the vast importance of the horticultural interests of the province and that he is anxious to promote them. Speeches were made by Mayor Urquhart, of Toronto; Mr. W. H. Bunting, of St. Catharines; Mr. A. N. Brown, of Wyoming, Del., and by one or two others.

Five conventions were held during the exhibition. Most of them were largely attended and all were important. They included the annual convention of the Ontario Fruit Growers' Association, the first annual convention of the Ontario Vegetable Growers' Association, a pomological convention, a gathering of representatives from the horticultural societies of the province, and the Bee Keepers' convention. Over 300 people holding standard railway certificates attended one or more of these meetings. This is an evidence of the interest taken in them.

GATE RECEIPTS SMALL.

In only one way was the exhibition disappointing. That was in the attendance of the citizens of Toronto. On this account the gate receipts were several hundred dollars less than it was hoped they would be and caused a deficit the directors have since had considerable difficulty in overcoming.

It is expected, however, that every dollar of expense connected with the exhibition will be paid in full without its being necessary for the management to appeal to the government for any further financial assistance. Plans are being laid, already, for a still larger and better exhibition next year, to which excursions will be run from all parts of the province. A full description of the recent exhibition and an outline of the proceedings at the various conventions is published in this issue.

SPECIAL FEATURES OF THE FRUIT EXHIBITS

THOSE who argue that apple growing in Ontario is on the wane had only to examine the fruit display to have their minds disabused of that thought. The general exhibit of fruit in quantity and quality was something of which every Canadian should feel proud. A marked improvement over last year's attempt was noted in every section, but in the commercial packages the greatest advancement was evidenced.

Mr. P. J. Carey, of Toronto, who judged the boxes and barrels, told The Horticulturist that the exhibit was fully three times as large as last year's. He also claimed that the demonstrations given by Mr. Boies, of British Columbia, in the different fruit sections had much to do with the improvement in packing. Last year not more than five per cent. of the exhibits were up to the mark, while this year fully 75 per cent. were in good shape. The chief defect was that the packages were slack. Some growers have not learned to adopt the special system, out of the 60 possible ways, that will give the proper fullness of package. So numerous were the entries and so close the competition it took the judges two days to complete the work.

The county exhibits added greatly to the appearance of the tables and proved valuable from an educational standpoint, while the work that can be accomplished, by forming local organizations, was evidenced by the displays from fruit growers' associations. These and the exhibits from the experiment stations were closely studied by those who intend setting out young fruit trees.

Perhaps the most surprising feature of the show was the specimens from the Central Experimental Farm, Ottawa. Mr. W. T. Macoun had 115 plates of apples and 20 of grapes. These showed the characteristics of the different sorts, nearly all of which are new or little known. The most promising of a collection of 16, all of Canadian origin, were McIntosh, Scarlet Pippin, Fameuse, Baxter, Canadian Baldwin and LaVictoire. Some Wealthy seedlings showed the variation that is common to seedlings. Crosses made by using McMahon White as female and Scott's Winter as male, also showed vast differences. Some resembled the female in appearance and the male in keeping qualities, while others retained the qualities of the female and acquired external appearances similar to the male. The object of these crosses is to get a hardy variety of good size and quality that will keep all winter.

Of the varieties extensively grown Mr. Macoun recommended Milwaukee, McIntosh and Pewaukee Russet, a new American seedling, as the most hardy for the Ottawa section. Bethel, too, has a good appearance, but is a shy bearer. Many new Russian seedlings show extreme hardiness, but they lack quality. The best are Sklianka, Winter Arabka and Bogdonoff.

To mature grapes in that northerly section the vines have to be laid down and covered with soil. Over 90 varieties matured large bunches of delicious fruit. Brighton, Vergennes, Lindley and Herbert are among the best.

Useful information was given at the Women's Institute tent, by Misses Shuttleworth and Lillian Gray, in demonstrating the easier methods of putting up fruits. It was explained that there is no necessity for the busy housewife to stand over a hot stove, as almost every kind of fruit can be put up in cold water to advantage. Rhubarb, gooseberries, plums, currants and other fruits were easily done in this way, and may be used at any time during the winter. Tomatoes, when ripe, may be peeled and put in a sealer of cold water and the whole set in a kettle of cold water and heated but not boiled. When done in this way they are excellent for slicing at any time. Competition in jars of apples, strawberries, cherries, pears, apple jelly, etc., between the branches of the Women's Institutes, brought out a fine collection of preserved fruits.

The Ontario Agricultural College, of Guelph, had a collection of insect and fungous diseases, weeds, apples, etc., in charge of Messrs. T. D. Jarvis, B.S.A., of the entomological department, and H. S. Peart, B. S.A., of the horticultural department. Mr. Jarvis had specimens of the common insects and fungi that attack our orchard and garden crops, nicely mounted or bottled; while Mr. Peart had supervision over a collection of 56 varieties of apples from the young orchard at the college.

The Lake Huron Experiment Station was represented by beautifully preserved specimens of berries, currants, and cherries. A special display was made of such varieties of apples as Spy, N. W. Greening, Ribston Pippin, Wealthy, Pewaukee, Grimes' Golden, Russet and Tallman Sweet which are adapted to that section. An exhibit of apples from the Algoma station included Wolfe River, Gideon, Longfield, Alexander and Wealthy, besides some Russian varieties, such as Borsdorf and Winter Arabka.

Simcoe station was represented by some very fine specimens of highly colored Wolfe River. Spy, Salome, Fallawater, Stark, Pewaukee and Peerless, a new variety of great promise, were also well represented. A magnificent collection of currants bottled in formalin, showing branch, leaf, and fruit clusters, made the exhibit from the Burlington station one of the most attractive. The more desirable varieties, such as Mann, Spy, Russet and Baldwin formed showy pyramids. From the St. Lawrence station McIntosh, Scarlet Pippin and Fameuse were most prominent. Trenton station had the largest collection of apples. There were not sufficient tables to place all of them. Ben Davis, Fallawater, Stark, Yellow Bellefleur, Gano, Fameuse, Trenton and a new variety, Coo's River Beauty, were represented by large specimens of fine quality. A general collection made by Secretary Woolverton from all the stations showed the leading dessert varieties, the leading commercial varieties, and undesirable varieties grown in Ontario.

Entries for the county competition were received from 14 counties, but owing to the delay in sending the prize lists and to the varieties not being suited to some of the districts only eight were represented. In Oxford the County Council refused to grant the required sum, but Messrs. Alex. McNeill, of Ottawa, and J. C. Harris, of Ingersoll, put up the necessary fee in order that that county should be represented. Five prizes were awarded. Hastings had the honor of winning first place, with fruit chiefly from the orchards of W. C. Reid and Lewis Miles. Lambton, Ontario, Lincoln and Kent came in the order named for the other prizes.

The St. Catharines Cold Storage Company won the red card for best general collection exhibited by a society or a fruit growers' association. The next best were shown by Norfolk Union Agricultural Society, Chatham Fruit Growers' Association, Orillia Horticultural Society, and Leamington Horticultural Society, and awards were made in the order named. In this class the Chatham association had a very attractive exhibit, but it lacked variety of specimens and was composed of packages that were of little commercial use.

The display in the general competition comprised varieties representing every section of Ontario where apples are grown. There was a marked difference in the quality of the same variety when grown in different sections. For color, size, and genuine fine quality the specimens shown by Mr. C. W. Challand, of Marburg, Norfolk county, were far superior to any other collection on the tables. His six varieties of winter apples, comprising King, Spitzenberg, Newton Pippin, Greening, Spy and Baldwin were hard to beat. In several classes specimens were shown for size rather than quality. In dessert classes, particularly, judges should be more careful in awarding prizes to large specimens. In Great Britain dessert apples are only called such when less than three inches in diameter. Criticism was offered regarding the placing of three varieties, dessert, fall, or early winter apples. The prize was given to Blenheim, King and Wagener, over beautiful specimens of Fameuse, Wealthy and Scarlet Pippin, that are much more suitable for dessert purposes. A few promising seedlings were exhibited, among them a good cooker by Mr. W. C. Reid, of Belleville.

In commercial packages Mr. Challand's fruit again merited special mention. The majority of the prizes were carried off by Mr. Elmer Lick, of Oshawa; Biggs Fruit and Produce Co., of Burlington; Mr. J. B. Guthrey, of Dixie; Chatham Fruit Growers' Association, and Forest Fruit Growers' Association. Other winners were C. L. Stephens, A. R. Dawson, W. C. Reid, A. D. Harkness, H. Jones, N. Brown and W. M. Robson.

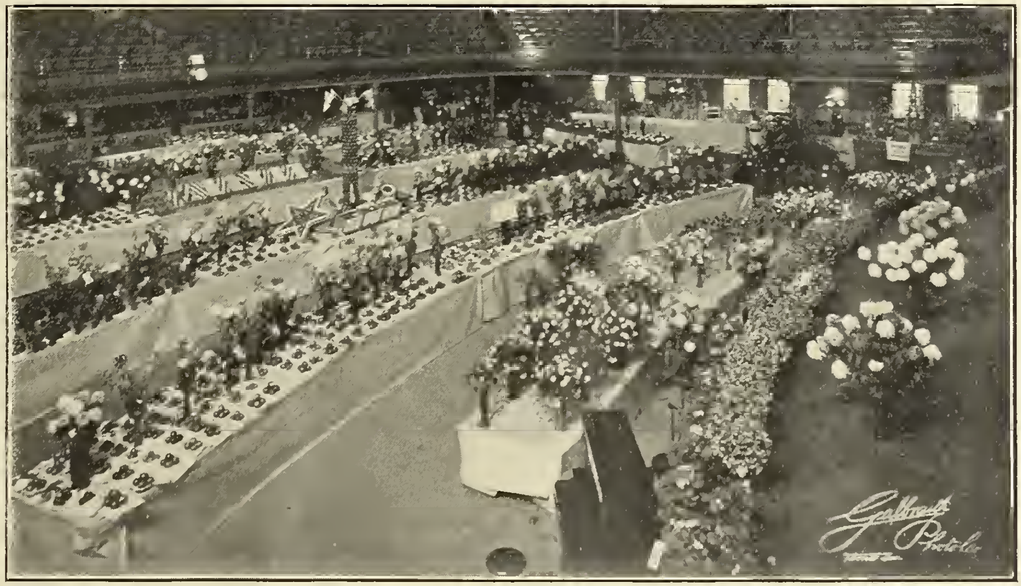
An exhibit made by the Fruit Division, Department of Agriculture, Ottawa, was in charge of Fruit Inspectors Carey and Gifford. A general display of popular packages for the different fruits, packing tables and demonstrations were important features of the show. Mr. Carey presented a handy home-made press, made of a framework of wood and two bands of iron to go over the box. The pressure was supplied by standing on a lever. Some criticism was made of the circle for the ordinary press on the barrel head on account of it being so small that sometimes the head is broken. It was recommended that the circle be made with a wing on either side to catch the edges of the pieces where the grain runs lengthwise.

A collection sent by Mr. Wm. Harris, of Day Mills, Algoma, showed that Pewaukee, Alexander, Duchess, Wealthy, Gideon, Haas and several Russian varieties thrive in that northern section. The fruit display was twice as large as that made last year, and it was of a most valuable educational nature.

THE FLOWER EXHIBIT A CREDIT TO CANADA

So magnificent was the sight, as one entered the hall, presented by the display of flowers it called forth an unconscious exclamation of delight. The immense stage was a mass of plants and bloom while most of the tables throughout the hall bore exhibits of beautiful cut flowers.

A framework built high up on the wall at the back of the stage was covered with lovely orchids. Below this was shown banks of palms and chrysanthemums, while along the edge of the platform were displayed exhibits of cyclamen, begonias Glorie de Lorraine, and primulas. Vases of cut chrysanthemums were also shown on the platform and added greatly to the beauty of the general effect. The chrysanthemum, being queen of the autumn flowers, naturally predominated in the exhibits. This grand flower was shown in various ways. One of the specimens had flowers measuring slightly over one inch in circumference, and brought to mind the plants our grandmothers grew. Blooms that measured 19 inches in circumference were also shown and bore tribute to the wonderful advancement that has been made in the cultivation of this grand flower. Chrysanthemum plants were shown that had but a single flower, while others bore as many as 150 blooms. Those shown by Messrs. Steele, Briggs Company, and Mr. Alex. McHardy, of Toronto, were splendid specimens.



A Portion of the Fruit and Floral Exhibits at the Recent Ontario Horticultural Exhibition

In the rose section every one's favorite, the American Beauty, was the most prominent. The new crimson rose, Richmond, had many admirers, the color, foliage and stem of those shown being as near perfect as could well be desired.

Entries in the carnation classes were numerous, and the competition was keen. Enchantress again won the honor of being the best light pink. Mrs. T. W. Lawson carried off the award offered for the best dark pink. In the red and white sections honors were about evenly divided among the different varieties shown. Some wonderful creations of the florists' art were shown in the section for made-up work.

The dining tables set complete for eight persons were a center of attraction. They were judged by Mrs. Mortimer Clark and several society ladies, who decided that the table exhibited by The Rosery, of Toronto, won first prize. The decorations of this table consisted of orchids, lily-of-the-valley, asparagus and Maidenhair ferns. The handsome silverpiece in the center of the table was tastefully arranged with these flowers, and at each plate was placed an orchid button hole bouquet for gentlemen or a corsage display of lily-of-the-valley for the ladies. The settings of this table complete were worth over $1,500.

The judging was very satisfactorily done by Mr. Jos. Bennett, of Montreal, who judged the plants and cut chrysanthemums, and by Mr. Robert Flowerday, of Detroit, who decided who should have the awards in the roses, carnation and made-up work. Mr. Flowerday expressed the opinion that Canada has nothing to learn from the United States in the growing or arrangement of flowers. It is unfortunate that the exhibition is held at a time of year when it is impossible for amateur flower growers to take a prominent part. The exhibition, however, was started mainly with the idea of promoting the fruit interests, and the dates of the show have to be arranged accordingly.

VEGETABLE EXHIBIT A SURPRISE

The vegetables were shown in the basement and their attractive appearance and exceptionally fine quality caused many exclamations of surprise. A wide table, running almost the entire width of the basement, had been reserved for these exhibits, but proved too small, with the result that many of the vegetables had to be shown along the floor at the side of the table. Down the center of the table were arranged pots of chrysanthemums in bloom, that added greatly to the general appearance. Altogether there were 306 entries..

The best exhibits were made in the cauliflower, citron, cabbage and onion sections. The first prize Swede turnips were pronounced to be the finest ever exhibited in Toronto. They were shown by Mr. R. J. Taylor, of Brantford. An exhibit of cauliflowers, made by Messrs. McKay, of Doncaster, was far better than any one could expect at this season. Two lots of Brussell's sprouts, shown by Messrs. Brown and Dandridge, of Humber Bay, were of excellent quality and were greatly admired. Messrs. W. Harris, J. G. Brown and J. B. Guthrey captured the cream of the prizes in onions. Some very fine white plume celery was shown by Mr. T. Benstead, of Strathroy. The winning bunch was the best that has been shown in Toronto for a long time, being splendidly bleached.

A yellow table squash, shown by Mr. R. J. Taylor, of Brantford, attracted general attention, it being of exceptionally fine quality as regards weight in proportion to size. Some larger squash were shown that did not weigh nearly as much. Some salsify, shown by Mr. T. Delworth, of Weston, was of very fine quality.

The two classes that gave the judges the greatest work were the Danvers onions and Paris Golden celery, in each of which there were large exhibits. The prizes offered for artichokes brought out a large exhibit, including specimens of both good and poor quality. Messrs. Rush and Delworth divided the honors.

Inasmuch as this was the first exhibition ever held under the auspices of the Ontario Vegetable Growers' Association, it was felt that the display for a first effort was a most creditable one and that another year it can be greatly improved.

ANNUAL MEETING OF THE FRUIT GROWERS

THE secretary's report, given at the annual meeting of the Ontario Fruit Growers' Association, held in Toronto November 14-16, showed the association to be in a flourishing condition financially and otherwise. The constitution was revised and officers elected as follows: President, James Scarf, of Woodstock; vice-president, Ed. Morris, of Fonthill; secretary-treasurer, P. W. Hodgetts, of Toronto; directors—Messrs. R. B. Whyte, of Ottawa; A. D. Harkness, of Irena; H. Jones,of Maitland;

W. H. Dempsey, of Trenton; Wm. Rickard, of Newcastle; E. Lick, of Oshawa; M. Pettit, of Winona; E. Morris, of Fonthill; H. H. Groff, of Simcoe; J. L. Hilborn, of Leamington; A. E. Sherrington, of Walkerton; T. H. Race, of Mitchell; G. C. Caston, of Craighurst; W. H. Bunting, of St. Catharines; A. McNeill, of Ottawa; W. T. Macoun, of Ottawa, and Prof. H. L. Hutt, of Guelph.

At the opening session the directors discussed the question of educating the fruit growers by demonstrations and orchard meetings, or any means that would result in a better quality of fruit being produced. Some thought that the horticultural societies should pay more attention to fruit and that growers should be notified when a society in that district was holding a meeting. Others pointed out that societies could not materially benefit fruit growers. The good work done by orchard meetings arranged by Mr. G. A. Putnam, Superintendent of Farmers' Institutes, should not be overlooked, but more of this is needed, and it was suggested that an energetic man, specially interested in fruit growing, be appointed to act with Mr. Putnam to arrange for more frequent meetings and demonstrations. The formation of cooperative associations and the offering of county prizes at exhibitions were considered important features.

The finding of the committee appointed to report on matters connected with The Canadian Horticulturist was favorable. In a discussion in regard to The Horticulturist the members agreed that the magazine has been greatly improved. The report of the committee was unanimously adopted.

AT THE EVENING SESSION.

Hon. Nelson Monteith, Minister of Agriculture, presided at the evening meeting. In his address as chairman he referred to the change of conditions since the time of Ontario's pioneer settlers when fruit was considered a luxury to the present when it is a necessity. Farmers were advised to practise intensive rather than extensive farming. The advisability of some recognition being given to those who propagate new varieties was mentioned as a stimulant to thorough investigative and scientific work.

Questions in horticulture were treated by Mr. Alex. McNeill, Chief of the Fruit Division. The best means of fittingly honoring distinguished horticulturists was dealt with. Mr. McNeill suggested that a suitable biographical address, referring to the work of the late Mr. D. C. Beaddle, be put in the annual report of the Fruit Growers' Association. It was recommended that such varieties of apples as McIntosh Red, Ontario and Baxter should have their histories written so that future generations would know their origin, characteristics and qualities.

The good work of the Transportation Committee before the railway commissioners, and the educational value of such shows as the Horticultural Exhibition were referred to. Mr. McNeill said that the past season taught fruit growers that there should be a systematic and regular report made giving the record of crops and results so that the prospects each year might be compared from month to month. This season buyers operated early and profits that should have accrued to the producers went to the dealers. He urged the growers not to sell until the market conditions were known and not to allow false reports, written by incompetent reporters, to influence them. It was pointed out that Ontario growers supply the local markets, but that they must work hard to gain a strong hold in the markets in the Canadian Northwest in competition with British Columbia and the western States, and also, to increase their trade with Great Britain.

Fruit growing in Great Britain was discussed by Mr. W. T. Macoun, of Ottawa.

The system of land tenure does not induce fruit growing on a large scale. Ireland is progressing rapidly, especially in producing cooking apples. Labor is cheap and this means cheap production. Experiments conducted for 12 years with sod and cultivated orchards showed the disadvantages of sod in comparison with the cultivated orchard.

In an enthusiastic address by Mr. A. N. Brown, a practical grower from Wyoming, Delaware, the fruit growers were advised to cooperate as do other professions. Mr. Brown claimed that special attention needs to be given to the marketing of the fruit. The best results come from cooperation in every branch of the industry. By cooperation in Delaware the growers have forced the buyers to come to their orchards and buy their fruit, paying cash, and have induced the railway companies to supply peach trains with fast engines that have the right of way over passenger trains. Special progress has been made, also, in the potato industry by cooperation on the part of the growers.

Some ideas on plant breeding were given by Mr. H. H. Groff, of Simcoe, who said that new varieties are not secured by gradual development, but that by persistent crossing the type can be broken and a new type established.

REVISION OF THE CONSTITUTION.

On Wednesday, November 15, the revision of the constitution was taken up and the by-laws passed with a few slight changes. A most important change was made that makes it possible for cooperative fruit growers' associations to become affiliated with the Fruit Growers' Association on the payment of 75 cents per member. Branch associations can be formed throughout the province on the same basis. An amendment to have the executive committee to consist of two members appointed by the directors to act with the president, vice-president and secretary, was deemed wise, because a quorum can be secured with less expense and good members can be retained from year to year. Considerable discussion developed over the notice given regarding the annual meeting. It was finally car-

INCIAL FRU
EXPERIMENT STATIONS
ONTARIO FRUIT
STATIONS
Galbraith Photo Co.

A Portion of the Exhibit of the Ontario Fruit Experiment Stations

ried that notice should be given through the public press and by circular letter at least two weeks before the annual meeting. Notice of an officers' meeting is to be served 10 days beforehand instead of a week as heretofore. In future a quorum for the transaction of business for the association comprises 10 members, instead of seven as formerly. Another change, that was objected to by some members, was the one that allowed the payment of the expenses of delegates to the annual convention for the whole time the convention is in session. Formerly the delegates were allowed two days' expenses. A strong effort will me made to materially incréase the membership through local branch organizations.

Questions in connection with transportation will be looked after by Messrs. Bunting, Thompson, E. D. Smith, W. L. Smith, H. W. Dawson and R. J. Graham. The cooperation committee comprises Messrs. Sherrington, Thompson, Johnson, Ross, Peart and Lick. A committee was appointed to look after the appointing of an expert to direct the work at the experiment stations. Other committees are the New Fruits Committee and the Historical or Biographical Committee.

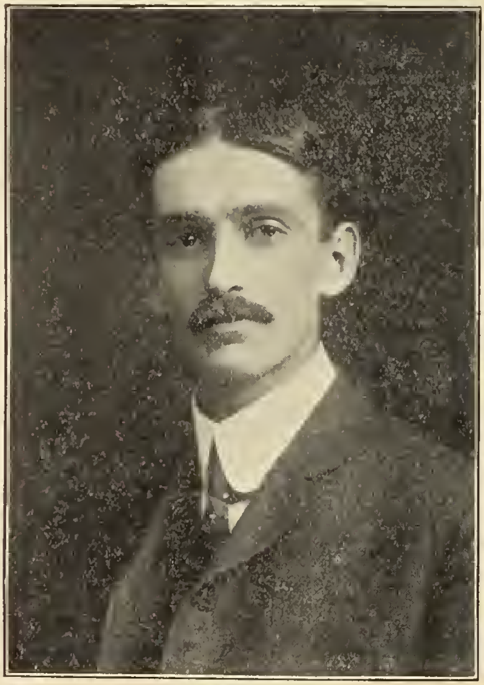
In the afternoon new ideas in spraying were discussed by Mr. A. N. Brown, of Wyoming, Delaware. Mr. Brown referred to the ravages of the San Jose scale in that state and accounted for its wide spread, during the past season, to the fact that the wet season nullified the effect of the spraying and also to the shade trees and ornamentals being so thickly infested that a new migration to the fruit trees could not be prevented. He claimed that this enemy must be met in the fall, when the larvae forms are most susceptible, as well as in the spring, if it is to be kept under control. Summer spraying is not effective because the foliage prevents it being done thoroughly. The use of lime sulphur and salt in the fall had resulted in some trees throwing their buds. For this reason he advised leaving the salt out. Petroleum is harmful, too, in the same way. The safest mixtures known in Delaware are two combination washes, one called Kil-o-scale, and the other Scalecide. The latter is perfectly soluble and costs no more than the lime-sulphur wash. Reports from 21 states say that it is effective.

It was pointed out by Mr. Brown that the ordinary hand pump cannot generate sufficient force to give the desirable mist-like spray. Power pumps are a necessity. Nozzles and sizes of extension rods, too, have much to do with the nature of the spray. The bore of the tube must be large and the friction reduced to a minimum by the absence of angles. With proper care and feeding of the soil quality can be put into fruit just as well as into an animal.

THE MINISTER OF AGRICULTURE.

Hon. Sydney Fisher referred to the prevention of the spread of the San Jose Scale by close inspection and fumigation of nursery stock. Reasons were given for placing the chief of the fruit division under the dairy commissioner. The perfect organization of those engaged in fruit growing in California and the consequent satisfactory state of the fruit trade of that country were cited, and the farmers were advised to work harmoniously and cooperatively so that high grade fruit may be produced. This fruit should be put up in a uniform attractive package. With proper methods of packing and handling Ontario growers should capture a large percentage of the trade in the west. The Fruit Marks Act has been leniently enforced in the past, but the growers and packers know what is wanted and in future it will be strictly enforced.

In the report of the new fruits committee Prof. H. L. Hutt, of the O. A. C., Guelph, said that promising seedlings are found from time to time, but perfection has not yet been reached. Four new seedlings from Gravenhurst were promising. One was a seedling from Duchess but had better keeping qualities. Another, of the Wealthy type, was a prolific bearer when young, and kept well on into the winter months. A seedling from a Guelph garden was of the Colvert type but the fruit was of longer season. A seedling peach from Hamilton, of Crawford type, was no better than many standard varieties. Mr. Wm. Orr, of Fruitland, sent a seedling peach that was large and free-stoned. It was of fine quality and superior to any of its season, the second or third week in October. At the Central Experimental Farm, Ottawa, Mr. W. T. Macoun has been crossing with the object of obtaining a variety with quality as high as McIntosh that will keep all winter. It takes time, however, and a thorough test is given before any new varieties are recommended.



P. W. Hodgetts, B.S.A., Secretary Ontario Fruit Growers' Association.

Mr. Norman Jack, of Chauteauguay Basin, Quebec, the Quebec Pomological Society representative, told of the advancement made in spraying and in methods of picking, packing and transportation. He said that no hard and fast rules can be laid down regarding cultivation, as much depends on the season.

BENEFITS OF COOPERATION.

The members of the cooperative committee then gave their report on the season's work. It was clearly shown that the cooperative organizations have come to stay and that the growers in the different sections realize that it is the most satisfactory way to handle the crop. Mr. Sherrington referred to the advantage to be gained by having the apple crop packed and marketed through the local associations and regretted that in many sections where organization had been effected there was no fruit to do business with. In most cases the members of the association pick their own crop and take the fruit to a central packing house where it is graded into firsts, seconds and culls. Some growers said that such associations could never be formed in their sections because the farmers would not, or could not, find time to harvest the crop.

"The Burlington Association," explained Mr. A. W. Peart, "works on a different basis. Each member picks and grades his own fruit and his name and address is branded on each box, together with a common brand for the association. All the fruit has been handled in boxes for 15 years. A manager is appointed and paid according to the number of boxes handled."

That barrels can be obtained at a much lower cost than formerly was shown by Mr. D. Johnson, of the Forest Association. That association employs a cooper and obtained barrels for this year's crop at 28 cents. When the association was formed, the growers used to grade and pack their own fruit, but it was found that every grower had a distinct idea as to what were XXX and what XX. Now they have 75 members and the fruit is brought to a central packing house. Much missionary work in the line of spraying has been done through this association with good results.

Mr. W. D. A. Ross, of the Chatham association, reported that individual packing was unsatisfactory and that for four years their fruit had been brought to a central packing house. Cooperative power spraying is done and the cost of the spraying deducted from the returns for the fruit. Good results have been secured this season from sales to Glasgow, f. o. b. at Chatham.

The remaining sessions will be reported in our next issue.

WHAT THE VEGETABLE GROWERS DID

THE convention of vegetable growers, the first held under the auspices of the recently formed Ontario Vegetable Growers' Association, was not largely attended, but great interest was shown in the papers and discussions. Two of the most interesting addresses were those given by Mr. A. McMeans, of Brantford, on the Cultivation and Marketing of Cauliflowers, and by Mr. J. L. Hilborn, of Leamington, on Growing Vegetables for the Early Markets. Extracts from both of these addresses are published in this issue.

A paper by Prof. R. Harcourt, of Guelph, on Fertilizers for Vegetable Growers, was read byProf.F.T. Shutt, of the Central Experimental Farm, Ottawa, who on its conclusion answered many questions asked by the growers. An extract from this paper appears on another page. Prof. Zavitz, of Guelph, gave a most instructive talk on the results of experiments he has conducted, at the college, in the growing of potatoes. These experiments had for their object the ascertaining of the best size of potato to plant for profit, the depth at which potatoes should be planted, the distance apart for planting to give the best results, etc. A summary of the results will be published in The Horticulturist.

Mr. W. T. Macoun, of the Central Experimental Farm, Ottawa, described experiments that have been conducted at the farm in Ottawa, in the growing of vegetables. Prof. T. D. Jarvis, of Guelph, dealt with Injurious Insects that Affect Vegetables. A brief talk that was fully appreciated was given by Mr. A. N. Brown, of Wyoming, Del. Short addresses were also given by Prof. F. C. Harrison and Mr. H. S. Peart, of the Agricultural College at Guelph. After each address scores of questions were asked the speakers and the value of the convention greatly increased.

FRUIT GROWERS AND THE TARIFF

A COMMITTEE representing the Ontario Fruit Growers' Association appeared before the tariff commission on November 17 and asked that no reduction be made in the duty on fruits imported into Canada. It was suggested that a decrease in the tariff on sugar would be in the interests of the fruit industry. The committee consisted of Messrs. W. H. Bunting, of St. Catharines; A. W. Peart, of Burlington; Robt. Thompson, of St. Catharines; D. Johnson, of Forest, and T. H. Race, of Mitchell.

The decision to have a deputation wait on the commission was precipitated by an address delivered at the fruit growers' convention by Mr. W. L. Smith, of The Weekly Sun, and by an announcement made during the discussion that followed that Toronto dealers had asked that the tariff on fruits be reduced.

Mr. Smith urged the fruit growers not to cut themselves loose from the sympathies of those engaged in mixed farming by endeavoring to have the tariff increased, and pointed out that the agricultural population should work together. Each year finds so much more exported from Canada than is imported that the foreign market governs the price. He claimed that as far as fruit growing is concerned it is impossible to increase the selling price by increasing the protection. There are few American fruits that come into competition with the Canadian product, and if the home-grown crop is handled in as careful a manner as the fruit from the States, Canadian growers will be able to balance up later in the season. The tender fruits from the States come when we have none, and as soon as the home crop is ripe the imported goods are not wanted because the quality is inferior.

According to Mr. Smith, a high tariff increases the price of what is to be bought without increasing the value of what is being sold. He cited the case of baskets. Less than three years ago logs were taken across the line, made into baskets, which were shipped back and sold at a lower price than Canadian manufacturers charged, despite the fact that duty had to be paid. One man in the St. Catharines district was $300 out of pocket on account of the duty on the baskets.

It was pointed out that an export trade is required for our canned goods. To get this trade it will be necessary to reduce the cost of production. A reduction in the price would, also, increase home consumption. The tariff on sugar hinders the development of this industry. The cost of sugar used in canning amounts to one-third the total cost of the goods. Under a reasonable tariff sugar would be much cheaper. Statistics from the sugar making countries in the south show that the raw sugar can be produced at one and one-half cents a pound. At that price over $100 an acre can be realized from the land devoted to sugar cane. There is no reason why refined sugar should not retail at three cents, or slightly more. The encouragement of the beet sugar industry in Canada was termed a misfortune, as it cannot prove a success unless under a high tariff or a high bounty.

Mr. Smith concluded by impressing on the growers the fact that a decrease in the price of sugar would cause more fruit to be preserved and canned and stimulate the demand for fruit, which is a health-giving food. He urged that it is not possible to increase the price obtained for fruit by putting the tariff wall higher, but that such action merely imposes a burden on the consumers.

In the discussion Mr. H. Dawson, commission dealer, of Toronto, claimed that it is well to have the consumers acquire the habit of eating our tender fruits before the home crop is ready for market. He pointed out that our chief imports of fruit and vegetables are made in June and July, and that our exports are 1,000 per cent. more than our imports. The fact that the year of low tariff was the year strawberries were cheapest was refe[illegible], and it was noted that low prices mean enormous consumption. Better transportation facilities were mentioned as being more desirable than increased tariff.

Mr. J. L. Hilborn, of Leamington, thought the tariff should be such that it would help to even up for the duty paid on certain implements that have to be used by fruit growers.

It was suggested by Mr. W. Armstrong, of Queenston, that if it could be arranged to admit American products free up to a certain date and shut them out after Canadian fruit is ready for sale that the Cana-

A Corner in the Basement Where the Commercial Fruit Packages Were Shown.

dian grower would benefit as a result.

Mr. Jos. Rush, of Humber Bay, claimed that only the doctors benefit by the importation of this American "stuff." As long as only good products are sent we can compete, but our prices have to be in keeping with the quality of our fruit, and the majority of consumers take the cheaper goods from the States.

"If we have a surplus of fruit to send out," said Mr. W. H. Bunting, of St. Catharines, "we find a wall practically prohibitive, and if we wish to buy implements we are again at a serious disadvantage. Besides, climatic conditions are against Canadian producers. Our seasons are short and the winters severe. A producer may succeed when hampered by one drawback, but three are too many."

Mr. Jos. Tweddle, of Fruitland, referred to the loss annually owing to the difficulty of getting labor. He claimed that the protection afforded manufacturers made it possible for them to pay high wages and keep the laboring men away from the farmers. Mr. Caston, of Craighurst, claimed that considerable money could be made out of some varieties of apples by shipping them to the northern states were it not for the duty.

While the discussion was going on it was reported that local fruit dealers had been before the tariff commission, which was sitting in Toronto, and had asked for a reduction in the duty on American fruits coming into Canada because these importations did not injure sales from Canadian producers whose fruit was not ripe when the foreign stock arrived.

The fruit growers were unanimous in adopting a resolution that the duty should not be reduced, and a committee was appointed to lay the facts before the tariff commission. This ended the discussion.

THE CASE PRESENTED.

On the Friday evening following this discussion the deputation from the association laid its case before the commission. Mr. Bunting, in introducing the deputation, read the following resolution: "That we, the committee appointed by the Ontario Fruit Growers' Association, in convention assembled, would respectfully urge upon the tariff commission that it would not be in the interests of the fruit industry of Canada if any reduction should be made in the duties on fruits coming into this country. That, while the fruit growers do not ask for an increase in the tariff on imported fruits, they would request that wherever possible specific be substituted for ad valorem duties."

(Continued on page 486.)

RASPBERRY CULTURE

RASPBERRIES and Their Culture was the subject of an entertaining talk by Mr. A. E. Sherrington, of Walkerton, at one of the sessions of the pomological convention. Many valuable points were brought up by Mr. Sherrington in the discussion that followed. Many varieties have been tested by Mr. Sherrington, who recommends Herbert, Marlboro and Cuthbert as being the most suitable varieties for his section of the province. The recommended varieties vary slightly from year to year because different conditions suit different sorts, and new ones are being experimented with each season. The Herbert is one of the seedlings from the collection of Mr. R. B. Whyte, of Ottawa. During the past season it has given excellent results. The first fruit was picked July 17 and the last August 11. In that time 565 ounces were taken off a 20-foot row. The quality was fine and it has proved to be a good shipper. The Cuthbert, however, was placed as the great standard variety, although outclassed in yield. The first fruit was harvested July 19, and 347 ounces were picked by August 14, when the crop was done. It is hardy and a vigorous grower, and in great demand in all sections.

Marlboro was found to be a shy bearer and to produce a dry crumbly fruit, lacking in quality. In 29 days from July 13 the crop harvested was 330 ounces. Turner came in July 11 and yielded only 257 ounces. On July 13 the first Phoenix were picked, and by August 14 the crop harvested amounted to 380 ounces. The fruit is small, but as a rule there is a heavy yield of good quality.

Black raspberries have been a comparative failure recently owing to the work of anthracnose. Hilborn was the hardiest and best. Conrath comes in earlier, but is not so hardy. Older was perfectly hardy, but is not recommended because the fruit is shiny black and the demand is not so brisk when the characteristic bloom is lacking. It, also, has a very short period of ripening. During the past season the crop was taken off in four pickings, from July 18 to August 1, and six plants yielded 161 ounces. The quality is not good.

Growers were advised not to set out hybrid bushes, as there is no commercial demand. Golden Queen was a very good variety, but is not needed. The same is true of such purple sorts as Columbian and Schaffer. The Columbian is the hardier, but not of such good quality.

It is necessary to have the ground thoroughly cultivated and perfectly free from grass before setting out the plantation. Cultivation and fertilization are the two main factors in having a good crop. Spring planting was recommended as being much ahead of fall planting. It is always best to have the plants set deeply because the roots are surface feeders and they should be kept down as low as possible. The most approved method is to make a furrow with the plow and then turn out another along the same bottom. The bushes can be set in this trench and the roots covered well.

Rows six feet apart give good satisfaction. The suckers are allowed to spread until a hedge-row is formed 30 to 36 inches wide. A space of three feet is maintained between the rows. This system is convenient for working with a horse cultivator, and specially adapted to growing between the orchard trees. A suitable arrangement is three rows of berries with the outside rows nine feet from the trees. When the orchard rows are 30 feet apart this gives satisfaction.

FERTILIZERS.

A fruit plantation needs plenty of fertilizers. Some growers rely solely on the commercial fertilizers. It is true that this avoids weed seeds, but it also results in a deficiency of humus and a compact surface soil. Wood ashes and barnyard manure, at least every two years, keeps the soil in good condition if sufficient cultivating is done. Shallow cultivation is best. Mr. Sherrington used the plow in his plantation one season and ruined the whole patch. The roots gradually come near the surface and plowing cuts the roots that supply the nourishment. A one-horse cultivator, that works the ground up two or three inches, used once a week, or oftener in dry weather, was recommended.

PRUNING.

No summer pruning is done in Mr. Sherrington's orchard, as such practise causes late laterals and numerous suckers. If there is time all the old wood is taken out in the fall; if not, this work is done in the spring after the fruit trees have been pruned. At the latter time, also, the canes are cut back. Great judgment is required in the distance to cut back. In some cases the canes have made rank growth. If there is a sufficient number of buds low down the canes can be cut back much more severely than if the buds are higher up. All canes that are damaged by frosts are removed. The canes are thinned out, leaving the strongest ones four to six inches apart.

From following such methods satisfactory results were obtained during the past season. From 23 rows, 300 feet long, in a young apple orchard, about 3,600 boxes were harvested, and the returns netted seven cents a box. According to Mr. Sherrington, a good yield is 3,000 to 4,000 boxes from an acre.

THE CURRANT PLANTATION

SEVERAL years' experience in the culture of currants have resulted in Mr. A. W. Peart, of Burlington, being classed as an expert in the growing of that class of fruit. Experiments have been carried on by him at the Burlington station, and the members of the Fruit Growers' Association were given the benefit of his work along that line in an interesting paper presented at the annual convention of the Fruit Growers' Association last month.

THE BEST SOIL.

After years of testing, Mr. Peart has concluded that a rich, moist, cool soil gives best results. In case the soil is very fertile satisfactory returns can be had among the orchard trees. When the bushes are shaded there is not the liability to scald that is found in the open, especially with the red varieties.

Better results are obtained from wide planting. The distance apart depends on the variety. As a rule the reds may go closer than the blacks. For the average plantation 6 x 6 or 6 x 7 is advisable. Fall planting should never be practised unless the soil is naturally well drained. If the land is low and wet the plants heave and are found lying on the surface in the spring because they had not time to become established before winter caused the growth to cease.

Mr. Peart usually prunes the bushes in the spring, but does not object to fall pruning if there is time. March is the best month. The old wood is cut out and the strong young shoots cut back, leaving sufficient canes to give a good crop. All wood over three years should be removed, and if the bushes are making vigorous growth the three-year-old wood may go, too. The reds bear on previous year's wood, but the blacks do not. For this reason the blacks cannot be cut back so closely. The bush form is recommended rather than the tree form, where the currant borer is found, because in the tree form, if the borers attack one stem, the whole bush is lost.

The varieties were classed as desirable, doubtful, and undesirable. The sorts placed under these headings are found to differ greatly from year to year. Among the red currants there are two classes of bushes, one of which has a much darker foliage than the other. The lighter green ones are the more rugged. The varieties of reds recommended are Cherry, Wilder, Prince Albert, North Star and Fay's Prolific. Naples, Saunders, Lee's Prolific and Collins' Prolific give best results among the black varieties tested. Undesirable red currants include Belle de St. Giles. The berry is large, but the bushes are unproductive. Brayley and Versailles are also undesirable. Among the whites the White Grape is productive, but White Imperial is highest in quality.

For some time there was a poor demand and correspondingly low prices for currants. This last year or two, however, has seen a change, and many growers have realized encouraging profits. With ordinary planting 1,200 bushes can be set on an acre. These easily average three quarts a bush, which gives 3,600 quarts of fruit from an acre. Recent prices have netted over three cents a quart after paying for packages and picking.

In the discussion that followed the presentation of Mr. Peart's paper, Mr. Joseph Tweddle, of Fruitland, said that there was a tendency to plant currants too close. One of his plantations was planted 6 x 4. Bushes have been removed until they are wide enough apart to permit work being done among them with a team, and he realizes three times the crop.

In reply to questions, Mr. Peart said that a plantation should be profitable for about 10 years. Rich soil is claimed to produce a rank growth that is liable to be killed back during the hardships of winter.

WINTER CARE OF DORMANT PLANTS, BULBS AND TUBERS*

WM. HUNT, O. A. C., GUELPH, ONT.

THE care of the numerous varieties of plants, bulbs and tubers, that add so much to the beauty of home surroundings in the summer time, and that require a period of rest or partial rest during our long winters, is one that presents many very difficult problems to the plant lover. The unattractive appearance of plant life when in a dormant condition often tends to induce even the most enthusiastic plant lover to forget sometimes the absolute necessity there is to still apply a small portion of the care we are so willing to give these plants when they are resplendent in all their summer beauty. Too often, also, our attention is so much taken up with the care of the winter flowering plants or bulbs that we forget our now dull and dingy looking summer friends and leave them to take care of themselves.

A little wholesome neglect is sometimes

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* Extract from an address delivered at the convention of delegates from horticultural societies held last month at the time of the Ontario Horticultural Exhibition.

beneficial to plant life, but when it comes to utter neglect and carelessness, even to plants in a resting condition, sorrowful regret at the loss of our summer favorites is the inevitable result of our inattention. Lack of knowledge as to the requirements of plants when taking their winter season of rest, is another factor that is accountable, oftentimes, for failure in wintering-over plants. Possibly there is no one phase or period of cultivated plant life that is less understood or that information is more eagerly sought for by plant lovers than this resting period. A lower temperature and a less bountiful supply of water, or the withholding of water altogether in some instances, are the principal factors in inducing rest or partial rest in plant life. How much or how little of these factors to give or to withhold from the plants is the great problem to solve.

POT HYDRANGEAS.

These plants are of Japanese origin, and are of a deciduous or leaf-shedding nature. Towards autumn, when the blooms have become rusty looking, the plants should be watered less frequently than in the summer until the leaves show signs of decay, when only sufficient water should be given them so as to keep the soil barely moist.

Keep the plants outside in the open until they have been exposed to five or six degrees of frost a few times, when before severe frost the plants can be lifted underneath the veranda or into a shed for a time before being put into the cellar, basement, or a cold room for the winter. A rather moist cellar with a temperature of 40 to 45 degrees will suit the hydrangea. If the atmosphere of the cellar is very dry or furnace heated, wrap the branches of the plants in several thicknesses of burlap or coarse sacking, tea matting, or similar material.

Sprinkle the wrapping about once a week with water. This will keep the wood or growth of the plant from shrivelling, an essential point in wintering over the hydrangeas successfully. Laying the plants down in a box and covering with dead leaves is a very good plan in a dry cellar, but watch out for mice, or they will soon ruin the plants underneath the leaves. I have found excelsior wood-packing fibre, or even fine shavings, a good substitute for leaves and not so likely to attract mice.

FUCHSIAS.

These require very much the same treatment as the hydrangea, but the tender cultivated varieties of these plants will not endure as much frost as will the hydrangea, although two or three degrees of frost will not injure them materially. A moist atmosphere in a cellar where a temperature of 45 degrees prevails will suit fuchsias when resting. The soil in the pots of both hydrangeas and fuchsias should never become dust dry even in a low temperature.

UNCOMMON SHRUBS.

Amongst the evergreen shrubs that can be used very effectively for out-door decoration purposes in summer time and that are seldom seen here, although very common in England and Europe, are the Ancubas, the Myrtle, Japanese Euonymus, Lauristinus, and the Bay Tree. All of these require very similar treatment to the oleander in winter. The mistake is too often made of treating specimens of these evergreen plants in the same way as deciduous plants are treated. Keep all of the plants just named in a temperature of 45 to 50 degrees, avoiding by all means a dry furnace-heated atmosphere. Better a cool damp root cellar for them where there is some light and the temperature near to freezing point all winter than in a dry arid atmosphere. All of these plants are becoming popular for summer and winter decorative purposes.

In giving the temperature and other requirements of the plants I have been speaking of, conditions and temperatures have been named that can usually be found around every home, rather than conditions not usually attainable by amateur plant growers, such as a cool greenhouse or underneath greenhouse benches.

Always endeavor to ascertain the conditions that surround the plants you are growing where they are found growing naturally, and then give them as nearly as possible the same conditions, when they are in a resting condition, as well as when they are in a growing state. The natural conditions and surroundings pertaining to plant life may be moderated or intensified oftentimes, but to diametrically oppose these conditions, as is sometimes done, means disappointment and failure will inevitably ensue.

EVERGREENS

DAVID Z. MORRIS, BROWN'S NURSERIES, ONT.

WHEN all the other leaved friends of our lawns and roadsides have deserted us, and the chill winds of winter blow, we have but the evergreen to remind us of their departed beauty. When this class of trees is mentioned most people think only of the commonest sort of conifers—the Norway Spruce—and it is only of comparatively recent years in this country that the more rare and beautiful varieties have come into popularity ; and the endless possible combinations both of themselves and with deciduous trees have come to be appreciated.

Their use has long been quite general in European gardens and nurseries, which difference may, to some extent, have been due to the milder climate, and the popular idea here that their culture in our rigorous rugged zone was out of the question. The writer can recall no more perfect specimens of a large range of varieties of evergreens than that to be seen at the experimental station in Ottawa.

The best results depend very largely on judicious handling of the young stock from the minute it is taken out of the nursery soil till it is again firmly planted in mother-earth. No class of trees is more susceptible to cold, or drying winds, and for this reason they should be carefully protected from exposure of any kind. The roots should be dipped in a puddle of clay and carefully burlapped for shipment. Spring planting, rather later than other classes of ornamentals, seems to succeed best. Much also depends on the nature of the soil, a sandy loam being best adapted to their rapid and luxuriant growth. When setting out,

Evergreens in the Arboretum at the Experimental Farm, Ottawa.

a judicious amount of water will help to revive the plant, but even this may be easily overdone and result in a mistaken kindness, for the soil must not be kept wet and soggy. When grown in a mucky nursery soil, it is best to handle the choice varieties with a ball of earth secured in burlap.

The selection of a somewhat protected spot is very desirable, especially in the case of the more delicate varieties, such as the junipers, retinosporas, and taxus. Exposure to severe, or constant winds, will prove injurious to these.

The most effective, pleasing, and lasting results in the planting of evergreens may be had by judiciously grouping them, with reference to their contrasting colors and shapes, at the same time distributing these groups over your grounds so that they may be as suggested—effective in winter when the field is all their own. The tall spindling junipers, grouped with spreading, heavy-growing spruce or hemlock; the feathery silvery or golden retinosporas, together with the squatty-growing Juniperus Canadensis; backed up by a few leafy Balsam Fir, breaking the sky line—what combination of ornamental trees could be more effective, either contrasted with deciduous growths or standing out against the snow covered ground and the leafless branches outlined in white.

The long list of quite hardy conifers makes it possible for one to assemble specimens that cannot fail to interest and instruct students and admirers of fine ornamental plantings, just as a collection of paintings or other works of art, and is an unending pleasure to the owner as well as to all beholders.

Among the spruce the Norway is always with us. The Douglas and Hemlock of feathery structure, and the Colorado Blue are among the most hardy and attractive. The Nordman and Concolor, of the Silver Fir class, are hardy and distinct, and should be prominent in every collection where sufficient room is afforded for majestic specimens.

Junipers seem to demand more care than any other class of evergreens, though when once established many of them are quite rugged. The Irish we all know. Then these in the Alpena Nana—low-branched and spreading in habit; the Virginiana or Red Cedar; and the Sabina, of dwarf growth, and also the beautiful golden and silver Japan, will lend life and variety to any mass of foliage.

Of the pines the Austrian and Pondorosa stand out in the open and alone. The Scotch, the White, and the low-down Mugho pines are equally desirable, but of slower and more moderate growth.

The yews comprise many unique and beautiful varieties, but they verge on the tender class and should, if planted, have some protection from wind and alternate freezing and thawing. This is a point that seems not to be appreciated by many. That is: that if a plant is so situated that it may remain frozen throughout the winter until the opening of spring, it will survive, whereas if the warm sun can occasionally strike the bark and the frost partly come out repeatedly, the result will be a loss. This is particularly true of evergreens and rhododendrons.

The arbor-vitae form a class specially valuable on account of their dense growth and hardiness for hedging or screens, though many of these are quite showy as single specimens. Among the former, of course, is the Occidentalis or American. Of the latter class Pyramidalis, Globosa and Hovey's Golden and Tom Thumb are quite hardy, and should be given a place.

Some of the retinosporas will, with slight protection until well established, endure our southern and middle Ontario winters, and on account of their peculiar beauty and effectiveness are well worth the trouble. The hardier varieties are Aurea and Argentea. To make a complete and attractive planting, as well as an economical and lasting result, the evergreen is just as essential as the perennial or the deciduous class, and may be truly said to be a joy forever.

WATERING HOUSE PLANTS

ALMOST everyone is anxious to have some plants in the windows or on centre tables, and very few homes can be found without some geraniums, fuchsias, begonias or other common plants. Palms, ferns, rubber plants, etc., too, are becoming common. Many plant lovers, however, lose several fine specimens each season from various causes. In many cases failure is due to injudicious watering. Some enthusiasts are too lavish with water, while others allow the plants to become too dry.

The professional florists exercise great care in supplying their plants with water. They have learned from experience how essential to success judicious watering is. While talking to a representative of The Horticulturist recently Mr. Thos. Manton, of Eglinton, one of Ontario's best known florists, said: "There can be no fixed rule laid down for watering plants. In dry, warm weather they need twice as much as when the air is cool. The best way to learn whether water is required or not is to rap on the side of the pot. If there is a hollow sound the soil is too dry. A thorough watering should be given or none at all. I always add water until it begins to run out at the bottom of the pot. If the pot sits in a saucer or jardiniere all the water that runs through should be thrown out. Stagnant water is very injurious to any plant. It is well to put a handful of gravel in the bottom of the jardiniere so that in case some water does run through the flower pot does not sit in it.

"Great care must be exercised in the fall when fires are first started, and again in the spring when warm weather allows fires to be dispensed with. After fires are started much more water is needed. In the spring the quantity can be decreased."

GREENS FOR CHRISTMAS

C. B. M.

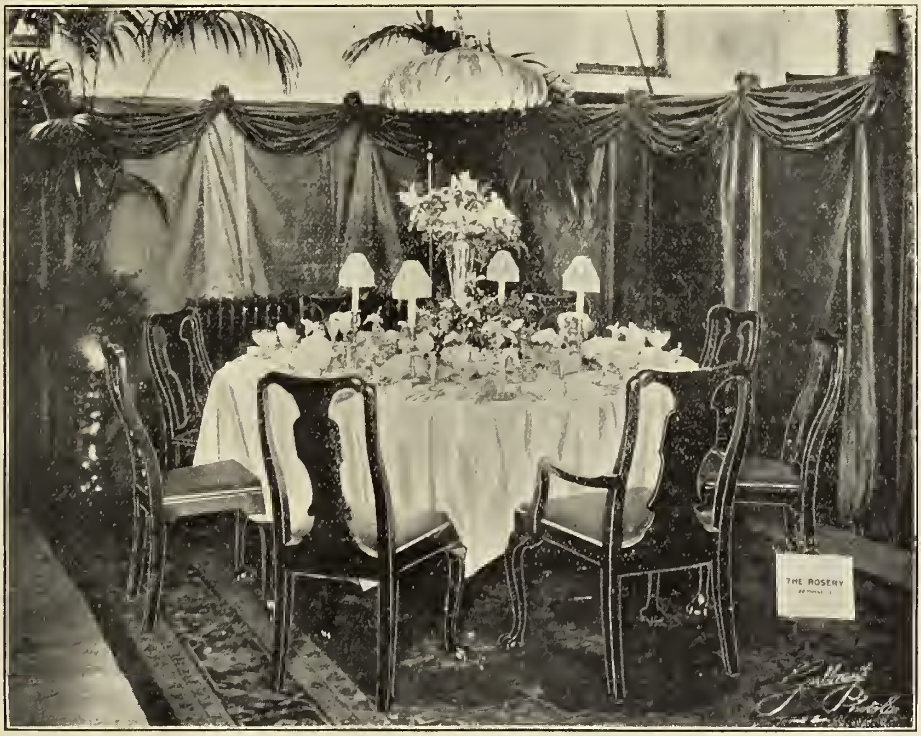
THE same apparent cheer is never in the household as strongly as at the Christmas time, and any evidences that may be displayed along that line, in the way of decorations, are always welcome. Many new and novel decorations for table use and window wreaths are looked for, and the following may be of use or offer some timely hints.

Holly, mistletoe and evergreens enter largely into the Christmas decorations, and of late years potted plants and cut flowers as well are fast becoming popular. The fern dish lends itself well for centerpiece table decoration. Filled with sprigs of holly covered with the red berries, and placed on a round mirror, surrounded with arbor-vitae or other Christmas green, it makes a simple but effective centerpiece for the table. Any well formed, not too tall fern, or palm, placed in a pot covered with scarlet crepe paper, finished off with a band of red satin ribbon and smart bow, makes a pleasing addition to any table. The pot thus decorated may be placed on a round mat of moss or bank of holly.

Another pleasing variation is found in a large, low, white basket, filled with red roses, the handle of which is tied with a large scarlet bow having a bright sprig of holly thrust through its loops. Distribute the roses among the guests after dinner.

A hollow, six-pointed star may be made of tin and filled with holly and mistletoe. At each point of the star, place a silver candlestick holding a wax candle, covered with a red paper shade. The red crepe paper bells, easily secured from the local florist at a small price, are also, used extensively to hang over the table. They may be suspended from the light over head. The bells, of different sizes, hung with red streamers, may be used in the archway between the large hall and living room. They make a very effective decoration when the rooms are thrown together for entertainment. Large bows of red satin ribbon may be artistically tied and placed at the opposite corners of a table, and small sprigs of holly, laid at intervals on the table, mixed in with the ribbon and a dashing centerpiece of holly, make a pleasing and easily arranged decoration. The long strips of arbor-vitae will readily adapt themselves to almost any decoration that may be required and make a beautiful showing when mixed with the red of the holly.

Nearly every one has a different idea regarding the decoration of the Christmas tree, that all-important event in a household, and these ideas have to be governed according to the circumstances and means available in each individual household. Strings of popcorn, tinsel, little candles, apples and oranges hung on the boughs of the trees, with the lace cornucopias filled with tiny candies and popcorn, all have had their place from time immemorial and will continue to do so as long as Christmas trees are in vogue, which will be always. Tufts of



The Table That Won First Prize in the Decorated Table Competition

The decorated tables at the Ontario Horticultural Exhibition attracted a great deal of attention. The fittings of this table, which was shown by The Rosery, of Toronto, were worth over $1500. A description of the table is published in this issue.

cotton sprinkled with mica or coarse salt (which is cheaper by far and more satisfactory) are often used to represent snow, and if the trees are to be lighted with the candles the effect is more pleasing to the small folks.

Wreaths of Christmas greens are still seen in the windows of rich and poor alike for many days before and after the all-important day which they are to celebrate. The fashion, if such it may be called, is in some localities on the wane, but it is still popular in many sections. Many persons decorate these wreaths with large scarlet bows which, if deftly tied and of the right kind of ribbon, add much to the decoration.

There are many ways of tying these bows. For a wreath of evergreen, which is less expensive than one of holly, much more trimming may be used. The ribbon chosen for the purpose should be the exact shade, or as near as possible, to that of the holly berry. The soft louisine ribbon is the easiest to manage and produces the most graceful effect when tied. A large bow of two loops and one end, placed at the top of the wreath, and extending in one piece of ribbon, over to about an angle of 45 degrees, where it ends in another similar bow, is perhaps a novel way of tying. A large bow of four or five loops and two ends of the same length, tied to the lower part of the wreath and let hang in their own way, and a round bow of five or six shorter loops, with two ends, one to each side of the wreath, are each in themselves well adapted for evergreen wreaths. One medium sized bow for a holly wreath is sufficient. It is easier and more satisfactory to fasten the ribbon to the wreaths after the bows are made, sewing them on from the underside of the wreaths with a wire or black thread.

The wrapping of Christmas gifts, in white paper, tying them with narrow silk ribbon or fancy cord, and placing a small sprig of holly in the ends or loops of the bow, wrapping the whole in a heavy paper for transportation purposes, is now almost universal. The more dainty effect secured and the more the individuality of the sender is conveyed to the recipient, the nearer we will have come to the blessedness of giving, rather than of receiving.

CAULIFLOWERS AND THEIR GROWTH *

A. M'MEANS, BRANTFORD, ONT.

"I WAS asked to select a subject to subject to speak on at this convention, and I selected the cauliflower, because I have been growing it for the last 10 years. You have heard Alfred Herbert's definition of a cauliflower, 'A cabbage with a college education.'

"Men's ideas change. The grower who a few years ago was disposed to sneer at books and 'book farmers' now turns for information to the printed page. How easy it is to tell in a few short sentences that which we have been years in finding out. Knowledge comes slowly and laboriously from the fields, and yet the closest observation of the character of a plant, its habits, likes and dislikes, and the habits of its enemies seldom goes unrewarded. Much has been written on the cauliflower, and yet it is a stranger to many a garden and is almost unknown in some markets.

"To grow cauliflowers successfully it is necessary to have good loam or sandy loam with loam predominating. It should be made as rich as we know how to make it. Where it is obtainable, I know of nothing

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* Extract from an address delivered at the first annual convention of the Ontario Vegetable Growers' Association, held in Toronto at the time of the Ontario Horticultural Exhibition.

better than successive applications of well-rotted stable manure. Plow as early as the first of May. By plowing early we preserve the moisture. When the first sign of weeds appears give a harrowing or cultivation. For your seed bed choose your piece of ground early and plow as early in the spring as possible, harrowing when any signs of weeds appear. About May 15 give a thorough cultivation, harrow well and put on your planker or roller.

"I prefer the plank, as it gives a nice, mellow, smooth seed bed. Do not be afraid to pay a high price for seed, and if possible secure seed that has been grown north. I consider Danish seed better than German.

"Of late years one of the chief faults has been that the germinating power of cauliflower seed has been very low, and whether the fault is due to the seedsmen or in the breeding up of the higher type I know not, but, this I do know, that, generally speaking, it takes one ounce of seed to produce 1,000 to 1,500 plants, and in sowing the seed I sow one ounce to about 400 feet of drill.

"Before the plants break the ground there should be a good supply of tobacco dust on hand. This is one of the best preventives I know of for that little bug that is so destructive to cabbage and cauliflower plants. Put it on while the dew is on the plants. It takes about five or six weeks for the plants to grow to the right size for transplanting.

"It is not good policy to set the plants too small. They should have a good, strong, stocky growth and will be more hardy and live better in an unfavorable time if their growth has been moderately slow in the seed bed. It is never best to crowd cauliflower in the field. Give them plenty of room and you will get better development. For the Erfurt I plant the rows three feet apart and two feet apart in the row.

"A few days before transplanting manure and plow your ground again, harrow well and put on your planker so that your surface is smoothed off nicely, select a cloudy day or after a rain to put your plants out, or if the weather be hot and dry take the afternoon, say from three o'clock, and evening for doing your work. If the soil is too dry, draw water and wet each place a little before setting the plant. Generally there is no need to draw water, as if the ground has been worked properly it will be moist enough to set out the young plants.

"The cultivation should always be level and should be run fairly deep the first and second times, and after that quite shallow. Cultivate as long as possible without breaking the leaves. Cauliflowers if left to grow without covering are not worth anything, but if covered at the proper time will generally come out nice and white.

"Commence to tie them up when the heads are the size of a coffee cup, taking two rows at a time. I use a strong three-ply twine. The tying should be done while the cauliflowers are dry and during the warm part of the day while the leaves are limber. Most people prefer to tie their flowers up tight. I like to leave them as open as possible just so the sun will not spot them, so that when cutting them you can look down and see how they are doing.

"The cutting involves considerable care and judgment, and must not be neglected, for money is often lost by not attending to the cutting at the right time. There are two methods in common use; one is to cut, trim and pack in boxes or baskets in the field as you go along. The other is to cut below the bottom leaf and cart to the barn to trim and pack. By cutting below the bottom leaf it stops the growth of the stalk, while if you leave any leaves on that stalk it lives and draws nourishment from the soil. I use the latter.

"I take six rows and do the third and

fourth rows first, that is cut and tie up as I go along; then I come back on the first and second and any heads that I cut I drop in the row I did first. The fifth and sixth rows are treated in the same way. I leave the twine on till I trim them in the barn."

GROWING CUCUMBERS FOR EARLY MARKETS *

J. L. HILBORN, LEAMINGTON, ONT.

OUR soil is well adapted for growing a few varieties of vegetables. Most of you, I suppose, grow for the local market. Ours are entirely for shipping; we do not try to sell anything in town. Everything goes by express and the express company gets every year $1,300 to $1,400 from us. We grow cucumbers, melons and tomatoes chiefly. I will start with early cucumbers.

It would be useless to attempt the kind of business we are doing without some form of greenhouse to start with. We start all our plants in some kind of greenhouse. There are some 40 greenhouses within two miles from my place. New ones are being built every year, and these houses are used for starting plants to be moved outside. Tomatoes are grown in some of them. We start to grow our plants about the first or second week in March.

The chairman: "What variety do you grow?"

Answer: "We have been growing two varieties, the White Spine chiefly, and Arlington. I would prefer something of the same nature with a deeper brighter green. Bervey's Extra Early White Spine is an early variety and of fairly good size.

"The seeds are started in flats, and when the third leaf is on we transplant them into other flats. We use a flat two feet long and one foot wide and about three to four inches deep. Formerly we used a much deeper flat, but we have found that using less soil is better. The way we discovered this was, that my little boy made some boxes two inches deep and picked out some of the cull plants and set them out in these boxes and every one of his plants beat ours. He used just about an inch and a half of soil and he got more stalky plants. After he had been doing this for three or four years we began doing it and we found that we got a much better rooted and more stalky plant, and we cut all our trays down. That goes to show that we may learn from people whom we think know much less than we do.

"What I say about cucumbers will apply to all the plants that we grow. We use the same plan for transplanting. We transplant the cucumbers in rows, using a stick, something like the head of a wooden rake, in which I have fingers. I make the holes with that."

Question: "What distance apart is it best to have the plants?"

Answer: "The first time put them two by three. With the cucumbers, when they begin to crowd, we put them into larger beds and boxes. I would rather transplant them twice if I had time. The oftener you transplant them the better root you get. You can get a thick, stalky, clump of roots and a more stalky plant and one that will resist checking very much better by transplanting two or three times.

"The man behind the hose has a wonderful lot to do with the plants. I like to let my plants dry out pretty well before I water them and then give them a good wetting and allow them to thoroughly dry again before watering them. Watering too often makes a soft plant that will not stand transplanting."

Question: "What object do you aim at

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in hardening the plants and then forcing them on again?"

Answer: "We do not let them dry out enough to check them; I like them to dry out pretty well. If you water too often it is impossible to get a hard, tough plant."

Question: "Do you water the leaf or the ground?"

Answer: "I put it right on with the hose, all over the leaf and all. I like to water when it will not reduce the temperature of the house too much. In the morning, just as the sun is coming up, is the best time, but, when we get busy, we water in the evening as well. We use five and six-inch pots and boxes, largely five inches by five inches and five inches deep. We use a good many that are six inches square. In either case we put two plants in the box. We try to get the plants a good size. They run perhaps one and a half feet long before we transplant them."

Question: "You have them in blossom before you put them out?"

Answer: "Yes. It is necessary, of course, not to give them any check in moving them. We are planting a number under cotton. We have a fence about seven feet high to the north and west. To the east there is a bit of grove and to the north. I think it will repay any vegetable man to put up a wind break. It is just like moving 100 miles south.

"We have boards two and a half feet high on one side and eight inches on the other, and use rafters one by four and connect with an angle iron. You can set them up very quickly, ours are 210 feet long and covered with cotton. We put the cucumbers in as soon as the danger of frost is over, about the first or fifth of May, and these cucumbers come in about 10 days later than those planted in the greenhouse. We keep the cotton over them for a while and then start hardening them off.

"We have to spray them to prevent the blight. We use the Bordeaux mixture the same as we use for melons. We have about 2,500 yards of cotton, and most of it is used for cucumbers. After we have the plants out under the cotton if frost threatens (if it is a windy night you will not get frost, but on a still clear night it is very easy to tell if it is going to freeze) if you have water connection just put on your hose and sprinkle your cotton about dark, while is it freezing, and the water will freeze on the cotton and then you will have a covering tighter than any glass house. It is practically air tight and it will stay so until the frost is over. I have found that to work splendidly and we have very little loss from frost."

The chairman: "How is this ground prepared before you put these plants out?"

Answer: "We open the furrows and put the rows in these 12 feet spaces. We open out the furrows with a plow and then put on the harrow and harrow it, then we plant in the hollow and we mulch well with rotten manure. Cucumbers want a great deal of water. We use an inch hose and let the water run through it as fast as it will. We mulch after we plant."

Question: "How do you draw the manure down?"

Answer: "We have a roadway between every two beds and the mulch is carried in trays. It is not a very good job to carry it in. Most of it is thrown directly from the wagon. It is easy to water, and the mulch of the manure prevents the ground from drying out and retains the water so that the plant gets the most of it. We just water the strip and cover with manure, and by running the cultivator once every 10 days or two weeks between the rows we prevent the ground from drying out."

Mr. Dillworth: "How do you run the cultivator when you have these scantlings?"

Answer: "We lift these off; it only takes a short time. We can take them off our beds and have them cultivated in about two hours."

Question: "Do you spray your cucumbers?"

Answer: "Yes, with the Bordeaux mixture."

Question: "Does that prevent blight on them?"

Answer: "Yes."

Question: "What strength do you use?"

Answer: "Four of coperas and six of lime to five gallons of water."

Question: "What time of the year are you past danger from frost?"

Answer: "It varies considerably; we usually start moving our tomatoes out in the field about the third or fourth of May, and we have never had a plant frozen after moving them outside."

Question: "What about cucumbers? Do you grow any outside from transplanting?"

Answer: "Yes. We start these about the first or tenth of April and transplant them the same as the others. We try to keep them as much out of the wind as possible. Above all things get your cucumbers where there is not much wind, if you can."

Question: "Do you train up those that you grow under glass?"

Answer: "You can grow twice as much in the house by training."

Question: "What is the best method of pruning?"

Answer: "I do not profess to be an expert; we prune very little. If we find the laterals are getting too numerous we prune some of them. We allow them to run and branch as they like till they reach the glass, and then nip them. We use poles to run them, sloping a little, and then we run twine along to hold them."

Question: "In the house I am building I intend to try poultry netting."

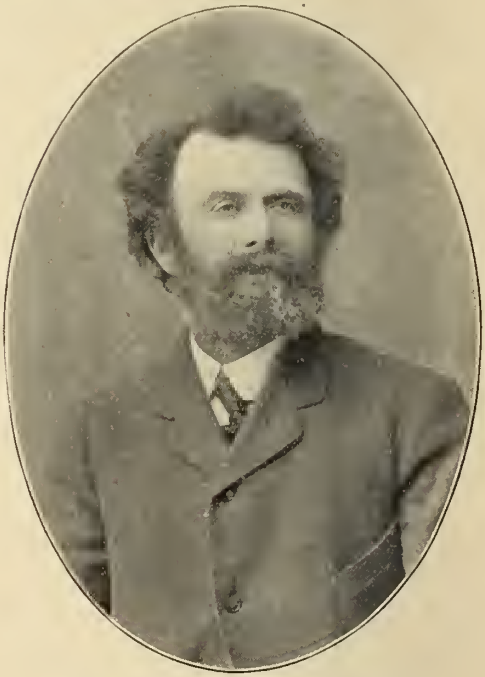
Answer: "I have only one fault to find with that, and that is to get the cucumbers to come down through it."

Voice: "I use three-inch mesh."

Mr. Hilborn: "I want a coarser mesh."

Mr. Dillworth: "What provisions do you make for pollenising the blossom?"

Answer: "We use a camel's hair brush on the first that come, but we endeavor to encourage the bees to come in. If we can get an old bumble bee to come in he will do more than a honey bee."



Mr. Joseph Rush, Humber Bay, Ont.

Mr. Rush is first vice-president of the Ontario Vegetable Growers' Association and an officer of the Toronto Branch of the Association. He is one of the best known vegetable growers in the Dominion.

Member: "I keep a hive of bees in the house."

Mr. Hilborn: "I intend to do that next spring.

Question: "Do you use raised benches or solid benches?"

Answer: "These are raised benches. In some houses we have solid beds and I like them best."

Question: "How close together do you plant in the house?"

Answer: "We put the plants about

three feet apart in the row, one plant to a place. Those that we grow for the greenhouses, we only grow one plant in the box. Our beds are about six feet apart and we run two rows in them. The houses are built for growing tomatoes."

RESULTS OF THE POTATO ROT

THE potato rot has caused great loss this year to Ontario growers. Reports from different sections show that the percentage of affected potatoes varies from 15 to 60, according to the nature of the soil.

The development of this disease has been particularly rapid during the past three or four seasons, and this fall many fields, on which the yield was good, are rendered practically worthless on account of the large percentage of affected tubers. The crops on low clay land in many counties are scarcely worth harvesting. Carloads reaching Toronto from Simcoe, Dufferin, Wellington and Ontario counties show that the disease has wrought great havoc in those counties. Not only has dissatisfaction been felt by the growers, but the dealers in cities and towns have had endless trouble with their customers. The result has been that they are purchasing their supplies elsewhere. For several weeks New Brunswick growers have been able to furnish all that has been required.

Some of the leading produce merchants on Colborne street, Toronto, who handle potatoes were interviewed by a member of The Horticulturist staff. "Early in the season," said Mr. J. J. Ryan, "I handled Ontario potatoes, but the prevalence of rot caused so much trouble that I decided to get my supply elsewhere. The red potatoes seem to be more subject to this disease than the white stock. The potatoes came in looking all right, but after standing about a week nearly half of them were rotten. Since early in September I have imported about 100 cars loads from Wellington, N. B., and in that quantity I have not noticed a bag of bad ones. I am handling 10 cars a week.

"The price was about the same there as here, but the Americans are beginning to look to that province for part of their supply, and the result has been a slight advance in price. Besides, colder weather forces the freight cost up because the cars have to be lined to prevent the potatoes from freezing."

"About September 1," remarked Mr. C. Barrett, "some car loads arrived from central Ontario in which 225 bags out of 400 were bad. Since early October I have got my supply from New Brunswick. There is practically no rot in that province. Dealers from the eastern states frequently buy much of their stock there when the supply is scarce across the line. In case that is done to any appreciable extent this year the price is liable to be raised so high that we cannot afford to import from there and we must then be content with what Ontario has produced."

"Car loads received from different parts of Ontario earlier in the season," said Mr. Ferrier, of Ferrier & Co., "contained 15 to 50 per cent. rotten potatoes. During the first week in November I received some which were not so bad, but I do not know of any section free from rot. We have imported large quantities from New Brunswick. The growers in that province send a white potato, the Green Mountain, known here as Delaware. It is of much better quality than Ontario stock, and the consumers willingly pay 25 cents a bushel more for it. They will pay higher prices for that variety when there is no disease in the Ontario crop.

"Ontario farmers do not realize that they are losing ground in the potato market. They have not learned that they must change seed frequently and use commercial fertilizers rather than barnyard manure. In New Brunswick and Maine a crop of 300 or 350 bushels an acre is not uncommon. The planting is done with a machine that is equipped with a fertilizer sprinkler as well. Twenty dollars an acre is not counted extravagant fertilizing. Ontario growers must change their methods or lose the market."

By way of aiding the growers to prevent the loss entailed by the rot, the bacteriological department of the Ontario Agricultural College, which has been studying the disease for the last year, would like to ascertain if the disease in various parts of Ontario is similar to the one with which it has been working, and which caused so much damage last year, and hence would like farmers troubled with this disease to mail an affected potato and state at the same time if they were troubled with the soft or wet rot last year and to what extent the rot is present in this season's crop.

VEGETABLE GROWERS BEFORE THE TARIFF COMMISSION

DEPUTATIONS from the Market Gardeners' Association of the province of Quebec, and from the Ontario Vegetable Growers' Association waited on the tariff commission during October and asked for greater protection.

The members of the Ontario association who waited on the commission when it sat in Toronto, asked for the following duty: Cucumbers, 15 cents per dozen; celery, 15 cents per dozen; cabbages, three cents each; beans, other than dry, 40 cents per bushel; tomatoes, two cents per pound; onions, dry, 40 cents per bushel of 50 pounds; potatoes, 25 cents per bushel; water melons, five cents, and musk melons three cents each, other vegetables not enumerated 25 per cent. ad valorem.

The Quebec Market Gardeners' Association appealed to the commissioners when it sat in Montreal and asked for much higher duties than did the Ontario association. Its demands were as follows: Cucumbers, 25 cents per dozen; lettuce, 25 cents per dozen; celery, 25 cents per dozen; egg plant, 25 cents per dozen; green beans, peas and spinach, 50 cents per bushel; tomatoes, 5 cents per pound; onions and potatoes, 25 cents per bushel; green cabbage, 3 cents per head; cauliflower, 3 cents per head; radishes, 10 cents per pound; parsley and watercress, 25 cents per pound; watermelon, 5 cents each; musk melon, 3 cents each; salted vegetables for pickle, 1 cent per pound; other vegetables not enumerated, and green corn, 25 per cent. ad valorem.

The deputation from the Ontario association was introduced by Mr. A. Campbell, M. P., and Hon. J. W. St. John, M.L.A., and included Messrs. A. McMeans, of Brantford; J. L. Hilborn, of Leamington, and Jos. Rush, of Humber Bay. A number of other well known growers were in attendance, including Messrs. John Atkin, of Sarnia; Geo. Syme, jr., R. Lankin and F. F. Reeves, officers of the Ontario association.

In introducing the deputation Mr. Campbell pointed out that while the growers were aware that a general increase in the tariff would result to their benefit they realized also that the consumers' interests must be considered, and therefore, were moderate in their demands. The existing duty affords little protection. Large quantities of vegetables are shipped into Canada, a considerable proportion of which are in a damaged condition. These vegetables are often passed at too low a valuation. If the industry was properly protected it would increase enormously.

Hon. Mr. St. John stated that the growers need a specific and not an ad valorem duty. The United States growers supply the Canadian markets with their goods early in the season and obtain high prices. By the time their own markets are glutted and the Canadian vegetables are ready for sale they dump their surplus on our markets forcing the prices down to almost nothing. Their poor cabbages, for instance, are sold at such low prices that the Canadian growers are unable to obtain as much for theirs as they are worth. If the surplus stock could be kept off the Canadian markets the desires of the Canadian growers would be satisfied.

Hon. Mr. Fielding asked if the superior quality of the Canadian vegetables was not their best protection. Hon. Mr. St. John replied that it would be were both classes of vegetables placed on the market at the same time, but the poor vegetables from the United States are offered first and force down the price, and later the Canadian vegetables, of better quality, are unable to advance the values.

Hon. Mr. Fielding asked if the vegetable growers are not as well-to-do and making as good a living as any other class of the community. Mr. McMeans replied that if they are it is because their women and children often have to help out with the work. Were the vegetable growers to engage only male help and pay the same wages the manufacturers do they could not earn a living. If the tariff were increased and the price of vegetables thereby advanced slightly it would make it possible for the vegetable growers to give their children the education they should receive.

Mr. J. L. Hilborn stated that within two miles of his place there are some 40 greenhouses and thousands of acres of land devoted to early vegetables. The industry, although seriously handicapped, is increasing rapidly. It would increase tenfold were it properly protected. Last summer the growers sold two carloads a day all over Ontario. At the beginning of the season their tomatoes sold for one dollar a bushel, but later, owing to the United States surplus, the price dropped rapidly until it reached the point where it was not profitable to even pick the crop.

Hon. Mr. Fielding asked if a duty of $1.20 a bushel is not rather high on tomatoes that sell for one dollar a bushel down. In reply it was pointed out that Florida tomatoes are selling for five dollars for crates containing three-quarters of a bushel each. Mr. Rush stated that when tomatoes sell for 25 cents a bushel, as they often do, two cents a bushel is a mere trifle. Beans were cited by Mr. Rush as a vegetable Canadian growers have practically given up growing owing to the United States competition.

The representatives of the vegetable growers made a strong case, and it was evident the members of the tariff commission were impressed with the information brought forward. Hon. Mr. Fielding stated that it was evident the vegetable growers have a grievance.

SUBMITTED A STATEMENT.

Both associations left with the commission a typewritten statement setting forth their demands, as follows:

The association respectfully submits to your honorable commission the following considerations:

1. Since many years our agricultural classes have complained upon reasonable grounds, in regard to the unrestricted importation into Ontario of large quantities of American vegetables, principally of early vegetables, to such an extent that the Canadian producer, the market gardener, who has invested considerable capital in this industry and employs many hands in its maintenance is seriously crippled in his efforts to earn a living.

(Continued on page 487.)

WHAT PEOPLE SAID ABOUT THE EXHIBITION

DURING the progress of The Ontario Horticultural Exhibition, held in Toronto last month, The Horticulturist gathered the following expressions of opinion from leading people present:

This.is a grand exhibition. The display of packages and packing is a desirable educational feature.—(C. M. Honsberger, Jordan Station.

It is a great exhibition and a credit to Ontario fruit growers.—(J. C. Harris, Ingersoll.

It is a fine display and shows the variation of color from south to north. The exhibit of boxed fruit is specially striking.—(Norman Jack, Chateaguay Basin, Que.

This exhibition should be of the greatest value to the country. The people are shown what can be grown in Ontario orchards and what are the best methods of packing. Together with the flowers it is an excellent display.—(Elmer Lick, Oshawa.

For quantity, color and variety it is a great show. The citizens of Toronto do not know what they are missing or more would come to see the display.—(Robert Thompson, St. Catharines.

The quality of the fruit is much superior to that shown last year. Altogether there is a marked improvement.—(W. E. A. Peer, Burlington.

This is the best show in the history of the Fruit Growers' Association. The worst feature is that it is not better patronized by the citizens of Toronto.—(W. W. Hilborn, Leamington.

It is the finest show of its kind ever held on this continent. Everything is attractive and the commercial packages and displays from the experiment stations are decidedly educational. A special advance has been made in the canned fruit exhibit. This will tend to educate the people to use such goods. —(Prof. H. L. Hutt, O.A.C., Guelph.

The show is grand in every respect. The pyramids of fruit are very attractive and the exhibits from the experiment stations better than usual.—(W. H. Dempsey, Trenton.

It is the best display ever made in Canada and decidedly creditable to the fruit growers of Ontario.—(W. H. Bunting, St. Catharines.

This exhibition should prove a great benefit to the grower who takes the trouble to investigate and follow out the points demonstrated and suggested. The appreciation shown by the citizens of Toronto is not very encouraging. Many growers have spent $30 or $40 to help make this show what it is, and the citizens will not spend a few cents to see the display.—(W. Armstrong, Queenston.

The commercial display is magnificent. This show should result in an enormous increase in the consumption of apples and other fruit in this city.—(W. L. Smith, Toronto.

The transition since the first meeting of the Fruit Growers' Association is something remarkable. The display from the different experiment stations is very encouraging.—(A. M. Smith, St. Catharines.

The vegetable exhibit exceeded my expectations 200 per cent. as regards the number of exhibits and their quality. If this exhibition becomes an annual affair the vegetable growers will fill the basement of Massey Hall with their exhibits.—(A. McMeans, Brantford, Ont.

The exhibits of vegetables greatly exceeded my expectations. They are a great credit to the exhibitors and to the management of the show.—(W. G. Carter, Dovercourt, Ont.

The exhibit of vegetables is a decided success and the quality is excellent.—(T. Delworth, Weston, Ont.

It is the best exhibit of vegetables I have seen in Canada. I did not expect to see as good vegetables at this time of year.—(J. Gibbard, Doncaster, Ont.

FRUIT GROWERS STILL DISSATISFIED

HON. SYDNEY FISHER, Dominion Minister of Agriculture, while addressing the members of the Ontario Fruit Growers' Association, at their annual convention last month, took advantage of the occasion to explain his reason for placing the chief of the fruit division under the control of the dairy commissioner. The explanation of Hon. Mr. Fisher did not convince the fruit growers that the arrangement he has made is in the best interests of the fruit industry. It would not be far from the mark to say that there was not a fruit grower present who was fully satisfied with the reasons given by Mr. Fisher for arranging his department as he has.

Hon. Mr. Fisher said in part: "The fact that the chief of the fruit division is under the dairy commissioner does not hinder the work connected with that branch being carried out in the best interests of the fruit growers. It is simply a case of administration for efficiency. The Dominion and Provincial Governments have done their best to help the producers and, by working in conjunction, one department has not duplicated the work of the other. The Ontario department has charge of all educational work, while matters pertaining to interprovincial and foreign trade come under my jurisdiction.

"The development of the fruit industry made it necessary, a few years ago, to arrange for improved transportation. Cold storage and refrigerator cars were needed. At that time such facilities were used in connection with the dairy industry. For this reason the transportation of fruit was placed under the direction of Prof. J. W. Robertson, who was then dairy commissioned. Associated with Prof. Robertson was Mr. Ruddick, who was in close touch with the work. When Prof. Robertson retired Mr. Ruddick was given charge of the cold storage and the extension of markets divisions. Inasmuch as the work of the fruit division is closely identified with the work of these two divisions it was deemed to be best to have the fruit division placed under Mr. Ruddick's supervision so that the work of all three divisions could be carried on to better advantage and to prevent the work of one division overlapping the work of another. The same staff was retained to look after the work of the fruit division, and I could not see that there was any need for a fruit commissioner. As long as the staff continues to give efficient service to the fruit growers I can see no just reason why a change in this arrangement should be made."

THE GROWERS' VIEWS.

Owing to the fact that Mr. A. McNeill, Chief of the Fruit Division, was presiding at the meeting at which Mr. Fisher spoke, and to the circumstance that Hon. Mr. Fisher was a guest of the Fruit Growers' Association, the growers present did not like to start a discussion on this matter. After the meeting many of the leading growers informed The Horticulturist that they would have liked to have been in a position to have expressed their views.

The following are the opinions of some of the most representative growers. It should be borne in mind that this is not a political matter as among the growers, whose views are here given, are well known Liberals:

C. M. Honsberger, Jordan Station, president Niagara Peninsula Fruit Growers' Association: "I would have liked to have expressed my views to Mr. Fisher as the present arrangement seems like an unjust transaction and an imposition on the fruit industry. The fruit interests are of too great importance to be dovetailed in with the dairy or any other division."

Mr. Robert Thompson, St. Catharines,

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The Canadian Horticulturist

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THE HORTICULTURAL EXHIBITION.

The success that attended the second Ontario Horticultural Exhibition, held last month in Toronto, must be gratifying to those who have the best interest of horticulture at heart. While the attendance on the part of the citizens of Toronto was disappointing it should be borne in mind that it is impossible to gain the support of the public for an institution of this nature in the course of only one or two years. Everything has to grow and prove its right to be patronized, including, even, The Ontario Horticultural Exhibition.

The most encouraging feature was the fact that those who attended were delighted with the show. This means that another year they will return and bring their friends with them and thus greater development may be anticipated. The various conventions, held at the same time, were a most valuable feature. As the years go by, and the exhibition becomes better known, it will be found that these conventions will grow rapidly in importance and attendance.

Next year an effort should be made to run excursions to the exhibition from all parts of the province. It will be possible to do what could not be done this year, that is guarantee half rates over the railways. This will mean a much larger outside attendance. In this work the horticultural societies and branch fruit and vegetable growers' associations will be able to take a prominent part. This year's effort indicates that the exhibition has been firmly established and that its future is bright.

THE NEW ASSOCIATION.

The representatives from the horticultural societies of Ontario acted wisely, last month, when they decided to form a provincial horticultural association of their own. The arrangement that has prevailed in the past, by which the horticultural societies were supposed to hold a joint convention with the fruit growers' association, has never been satisfactory. The fruit growers' association was formed, principally, for the promotion of the commercial fruit interests of the province. Horticultural societies have an entirely different field of work along the line of the development of amateur horticulture and civic improvement. The two bodies would never have been brought together had it not been for the desire of the directors of the fruit growers' association to receive the assistance of the horticultural societies in the publication of their official organ.

The formation of the Ontario Horticultural Association means that in future the fruit growers' association will be able to devote its whole time and attention to its special field of work while the horticultural societies will have an opportunity to take up important matters that have been neglected in the past. Both bodies should profit by the change and nothing but good result. May the life of the new Ontario Horticultural Association be a long one and fruitful of much good work.

FRUIT GROWERS' NEW CONSTITUTION.

The change that has been made in the constitution of the Ontario Fruit Growers' Association is in the right direction, although experience will probably show that the new constitution can be greatly improved. The fact that the cost of membership has been so great as to prevent branch fruit growers' associations from becoming affiliated with the Ontario association has been a serious weakness to the latter body. This defect, by means of the change that has been made, has been overcome in part although it is doubtful if many of the local associations will care to join the provincial body even on the terms now offered.

Before the Ontario association can expect to have many branch associations it will have to realize that the latter must be given much more by the parent body than it receives in return and that the local bodies must be given considerable say in the management of the provincial organization. This latter is the plan that has been adopted by the Ontario Vegetable Growers' Association. It will be interesting to see which plan gives the best results.

Although the Ontario Vegetable Growers' Association has been formed only eight months and is receiving a government grant just one-third as large as that of the Ontario Fruit Growers' Association, it already has a paid-up membership of 225 with branches at Toronto, Hamilton, St. Catharines, Brantford, Leamington, Chatham and Sarnia. The directors of the Vegetable Growers' Association have prepared a plan of work that should greatly strengthen the association, during the coming year. The Fruit Growers' Association will have to bestir itself if it does not want to be relegated to second place.

Two handsome ferns have been given The Horticulturist by Mr. A. Gilchrist, of Oaklea, West Toronto Junction. One is a specimen of the new Nephrolepsis Barrowsi. The other is a well grown plant of Nephrolepsis Scotti. Both are splendid ferns and Mr. Gilchrist has been voted the thanks of the staff for his lovely donation.

The words of praise, expressed at the recent convention of the Ontario Fruit Growers' Association, over the improvements that have been made in The Canadian Horticulturist are appreciated as being a recognition of the efforts we are putting forth to make this paper one of which our readers may well feel proud.

Mr. S. Batcheler, of Leamington, Ont, was recently forwarded a nice premium by The Horticulturist for having purchased goods from the Webster Floral Co., of Hamilton, and for having told them that he saw their advertisement in this paper. It pays to patronize our advertisers. Try it and see.

Could you give any of your friends who are interested in fruit, flowers or vegetables a nicer Christmas present than a year's subscription to The Canadian Horticulturist. Think it over.

When buying from our advertisers don't forget to tell them that you saw their advertisement in The Canadian Horticulturist.

Fruit Growers Still Dissatisfied

Concluded from page 483.)

president St. Catharines Cold Storage and Forwarding Company : " We would prefer to have a division under a separate head and not subordinate to any other, so that when we want anything we will have a man at the head of the fruit division who will be in touch with our needs and who will be in a position to take action without having to consult the head of any other division. The Dominion department has given us all that we require so far, but we feel that this may not always be the case. It is like putting any other man than a farmer in as minister of agriculture."

Mr. A. E. Sherrington of Walkerton, manager Walkerton Fruit Growers' Association : " Owing to the importance of the fruit industry it is absolutely necessary that the fruit division shall be separate and distinct from any other. After listening to the remarks of Hon. Mr. Fisher in regard to the fruit growers of Canada asking and demanding that a fruit commissioner be appointed at Ottawa, and hearing his statement that the present arrangement will not injuriously affect the fruit interests, I am of the opinion that no matter how good a man Mr. Ruddick may be, he is not in as close sympathy or touch with the fruit growers of the Dominion as the man in charge of the fruit interests of the Dominion department at Ottawa should be."

Mr. W. A. Peer, of Freeman, secretary of the Burlington Fruit Growers' Association: " I listened to Hon. Mr. Fisher's explanation of his reasons for placing the fruit division under the dairy division, but it failed to convince me that his action was in the best interests of the fruit growers. The fruit industry is developing so rapidly it warrants the appointment of an independent commissioner."

Mr. Murray Pettit, of Winona, president Niagara District Fruit Growers' Stock Co., Limited: ' Would the dairymen or live stock breeders be satisfied if the chief of their divisions were placed under the chief of the fruit division ? They would not, for they would realize that such an arrangement would place their industry in a secondary position. As fruit growers, we cannot but feel that if our industry is to receive the encouragement it should, it should have at its head a man who is in close touch with out needs and who is in a position to act without having to consult a person who is known to lack experience in fruit growing."

D. Johnson, president Forest Fruit Growers' Association: " The fruit growers of Ontario cannot help but feel, in spite of the very reasonable explanation of Hon. Mr. Fisher, that their interests have been placed in a secondary position when their worthy chief has been placed under the control of the dairy department. While we greatly respect and admire Mr. Ruddick personally, yet we are strongly of the opinion that our interests will be largely sacrificed by not having an independent fruit commissioner. The fruit division requires great extension rather than curtailment, and I have no doubt if our present chief is given proper support and liberty of action that the fruit industry will be much helped."

The Tariff Essex Growers Want

The vegetable growers of Essex county have asked for an increase in the duty on certain products that come into keenest competition with the crops produced in that district.

Tomato growers asked for 25 per cent. on a minimum valuation of two cents a pound. It was requested that the tariff on cucumbers be made 25 cents a dozen, cabbage two cents a head and melons three cents each.

I have noted quite an improvement in The Horticulturist, and wish you every success in your efforts to further improve it.—(W. Hewitson, Fruitland, Ont.

Fruit Growers and the Tariff

(Concluded from page 466.)

Mr. Bunting claimed that the tariff that has been in operation since 1897 has been satisfactory to growers and not a burden to the consumers. The fruit industry has increased since 1897 until now there are 350,000 acres in orchard and garden in Ontario. The annual production of apples is about 11,000,000 barrels. In that time the prices have decreased to the consumer although the introduction of such pests as the San Jose Scale as well as the higher wages paid the laborers have increased the cost of production. The improvements in packing and efforts made to develop trade in the Canadian northwest were referred to. If the tariff is reduced the United Statesers would flood our market when they had a surplus and fruit growing in Canada would be rendered unstable.

A specific duty was requested in place of ad valorem because it is more definite, and does not leave a chance to send goods in at a low nominal price. The duty on plums is 25 per cent and on pears 20 per cent. A change to one and a half cents a pound and 25 cents a bushel, respectively, would make the rate practically the same as is imposed on our products going across the line.

In reply to a question from Hon. Mr. Patterson regarding the local dealers claiming that a reduction in the tariff would not hurt the growers, Mr. Bunting explained that the growers looked for a fair margin of profit on part of the crop, and on account of its being perishable it could not be held over. It was necessary, therefore, that the growers obtain the prices that prevail before the market is glutted by the southern crop.

The extent of the fruit industry was referred to by Mr. A. W. Peart, of Burlington. The total value of orchard and garden lands in Ontario was placed at $40,000,000. The increase in production, and the consequent decrease in profit during the past few years was materially increased by the cost of labor which had advanced owing to protection to the manufacturers enabling them to pay high wages. The fact that canning factories and box, barrel, and basket factories depended on the fruit industry was also alluded to.

The high price of sugar was taken up by Mr. Robt. Thompson, of St. Catharines. The following resolution was read: "That this association believes it to be desirable, and in the interests of the fruit industry and the general public, that a reduction should be made in the tariff on refined sugar." The need for an outlet for our surplus crops, and the necessity of cheap sugar to assist the canners to compete on foreign markets was emphasized. Last year jams and jellies to the value of nearly $1,000,000 were imported and these were made from fruit sent from Canada and manufactured where sugar was cheap.

Mr. D. Johnson, of Forest, declared that the fruit growers should be encouraged in every way possible. If Canadian canners could secure sugar and glass at the low price that a reduced tariff on these articles would ensure, our increased trade in canned goods with our Canadian northwest and with foreign countries would benefit the growers as well as the consumers. A large percentage of our apples is allowed to go to waste each year that would be canned if conditions were more favorable.

During the hearing the commissioners showed their interest in the fruit growers' requests by asking questions bearing on the points brought up by the different members of the committee. The case for the fruit growers was presented by the committee in a most able manner.

Fruit Convention Notes

The Ontario Fruit Growers' Association appointed Messrs. H. Jones, E. Lick, W. H. Bunting, R. Thompson, Murray Pettit, A. W. Peart, J. L. Hilborn, D. Johnson and A. E. Sherrington to represent the fruit growers at the Dominion Conference that is to be held in Ottawa in February.

An illuminated address was presented to Mr. W. H. Bunting by the association, showing the hearty appreciation of the growers for the businesslike manner in which he has labored in the interests of the fruit industry.

A resolution was passed fittingly recognizing the good service rendered by Mr. Alex. McNeill, as president of the association and as chief of the fruit division at Ottawa.

The able manner in which Canada and her fruit interests were represented at the St. Louis Exposition was referred to in a resolution congratulating Mr. T. H. Race on his good work.

A welcome visitor at the fruit growers' meetings was Mr. L. B. Rice, of Port Huron, Michigan, who represented the Michigan Horticultural Society. On behalf of that society he wished Ontario's efforts every success and extended a cordial invitation to the Ontario Fruit Growers' Association to be represented at their convention in Grand Rapids, December 5 to 7.

The benefits to be derived from educational work through the Farmers' Institutes and educational features at the fairs and exhibitions were recognized by the growers, and a resolution was passed asking Mr. G. A. Putnam, superintendent of the institutes, and Mr. H. B. Cowan, superintendent of agricultural societies, to extend this work.

A resolution was passed by the fruit growers instructing the delegates to the Dominion Conference to urge the federal parliament to place express rates within the control of the Railway Commission. The express rates, at present, are exorbitant.

The executive of the Fruit Growers' Association were instructed to wait on the proper railway official to try to secure the privilege now accorded agricultural societies, of free return tickets from their annual convention without regard to the number in attendance.

Please accept congratulations on the grand publication you issue under the title of The Canadian Horticulturist.—(Harry H. Davey, The Fruit World, Melbourne, Australia.

MUST HAVE STANDARD PACKAGES

Fruit growers and representatives from the manufacturers of fruit packages met and discussed matters pertaining to sizes and shapes of packages at the annual meeting of the Ontario Fruit Growers' Association held in Toronto on November 16. Those present were unanimous in the opinion that standard sizes and standard shapes should be adopted. The growers appointed a committee to meet the manufacturers so that the matter may be brought before the authorities.

It was evident, from the discussion, that neither the manufacturers nor the growers knew the dimensions of what is termed the Ontario apple barrel. It was also clear that each manufacturer of baskets makes a basket to suit his customers.

In opening the case for the growers, Mr. Robert Thompson, of St. Catharines, said that the 11-quart basket had given satisfaction, but suggested that the six-and-two-thirds quart basket be discarded and a half basket or one with five-and-a-half quart capacity be used in its stead. He claimed that the six-and-two-thirds quart basket is not generally made now because it does not sell for more than a half basket. For that reason smaller sizes are used. The present carriers for tender fruits are not satisfactory, and the pear package requires to be improved. Standard dimensions are wanted for each size because, when only size is mentioned, each manufacturer prepares a last to suit, and perhaps no two makers turn out packages similar in shape. The length, depth and width at top and bottom must be made imperative. It was also suggested by Mr. Thompson that the 96-quart barrel, with 28½ inch stave, should be adopted in place of the larger barrels now used in Ontario.

Mr. James Innes, barrel manufacturer of Chatham, said that New York growers had shipped pears successfully in a keg with 17½ inch staves and 14 inch head. With regard to the apple barrel it was explained that staves that were not good enough to make flour barrels could be used in the manufacture of apple barrels. This is the chief reason why manufacturers turn out so many 30 inch barrels. These, however, can be cut down to the 28½ inch size.

It was pointed out by Mr. A. E. Sherrington, of Walkerton, that the people in Great Britain know the Ontario barrel to be larger than the one used in Nova Scotia, and willingly pay more for it. The merchants across the water had informed him that the size should not be changed.

A basket manufacturer said it was advisable to have a uniform size, shape, and make throughout Canada, but that steps should be taken, also, to prevent other sizes and shapes being imported. Another said that there should be common sizes, and that if any other size were made the capacity and dimensions should be plainly stamped on the outside of each package. Mr. Everest suggested that inspectors be appointed to see that the law is lived up to. He thought that in most cases the producer was to blame for the various sizes now used. This statement was challenged by Major Jas. Shepherd, of Queenston, who claimed that manufacturers go around offering the smaller baskets to the producers at easy prices.

It was pointed out by Mr. Geo. Williams, of Thorold, that, as the manufacturers have various dimensions for the different sizes now in use, samples from the factories should be submitted to the growers. A committee could then decide on the most satisfactory dimensions. It entails considerable expense to change the last on which the baskets are made. The one that looks best and packs to best advantage in a car should be adopted.

Dairy Commissioner J. A. Ruddick pointed out that something definite must be laid before the Dominion Parliament and suggested that a committee be appointed to prepare a definite request that can be further discussed at the Dominion Fruit Growers' Conference that will meet in February.

A committee comprising Messrs. Robert Thompson, A. W. Peart, D. Johnson and W. D. A. Ross later conferred with the manufacturers of packages and it was arranged that the manufacturers should submit samples, so that the committee may select the one that suits best and present their report at the conference in Ottawa in February.

Vegetable Growers Before Tariff Commission

(Concluded from page 481.)

2. The American tariff on vegetables imported from Canada into the United States is almost prohibitive, carrying both specific and ad valorem duties; the American climate enables the American market gardeners, in advance of our own, to cultivate vegetables in the open fields, at an extremely low rate of wages, and when the United States markets are sufficiently supplied the surplus stock of garden produce is shipped into this country and dumped on our markets on payment of such an insignificant duty that the competition caused to our gardeners is in many instances ruinous. The injustice of the situation is increased by the fact that the United States markets are practically closed against Canadian growers.

3. Such American garden produce arriving at Montreal and Toronto in large quantities, being the surplus stock of the United States markets, and on account of its perishable character, valued at extremely low price, and subject to an insignificant duty, is acquired at very inferior prices by Ontario importers and unexpectedly thrown on our markets, glutting the said markets and causing great loss and damage to our farmers and gardeners.

4. As a result of this wholesale, indiscriminate and unregulated importation of American produce, the Canadian markets are filled with foreign vegetables long before our crops are ready for sale, and all early vegetables cultivated in Canada are liable to fluctuation and falls in value of such extent and uncertainty as to discourage market gardening in Canada.

5. Not only have very large amounts been in-

vested here in proper equipment for the carrying on of the market gardening industry and the early production of vegetables (amounting to many millions of dollars), but many thousand families rely on the maintenance and development of this industry for their subsistence.

6. The industry is susceptible of very great extension and of furnishing a profitable and happy livelihood to a large class of our agricultural population.

7. It is to be borne in mind that the market gardeners of Canada pay considerable duties on every article that they use in their industry, on garden tools, on harness, carts, wagons, all agricultural implements, on their clothes, the materials for their conservatories and in fact all that they use for the prosecution of their industry; they do not, however, object to such conditions if a protective policy is deemed necessary in the country's interests. The market gardeners merely ask for a reasonable protection of their own interests.

8. The association in no way seeks to obtain the exclusion of American garden produce, but the enactment of such changes in the Canadian tariff, on the lines adopted by the United Statesers in their own country, as will secure fair and stable conditions in our own vegetable markets and prevent our home market being made the dumping ground for the surplus produce of the United States.

9. A careful examination would show that our market gardeners, if encouraged, would be in a position to supply most of the requirements of our markets during the whole year with new and fresh vegetables, such as lettuce, watercress, radishes, celery, cauliflower, cucumbers, spinach, parsley, etc., at fair prices.

10. The Canadian duty on vegetables imported into Canada is as follows:

Beans, 15 cents per bushel.
Peas, 10 cents per bushel.
Potatoes, 15 cents per bushel.
Vegetables not otherwise provided for, 25 per cent.
Fresh tomatoes, 20 cents per bushel and 10 per cent. ad valorem.

11. The United States duty on vegetables imported from Canada is as follows :

Beans, 45 cents per bushel of 60 lbs.
Cabbages, 3 cents each.
Onions, 40 cents per bushel.
Green Peas, 40 cents per bushel.
Potatoes, 25 cents per bushel of 60 lbs.
Vegetables in their natural state not otherwise provided for, 25 per cent. ad valorem.

(To be concluded in January issue)

Coopers to Combine

The manufacturers of barrels, boxes and baskets throughout Ontario purpose forming a combine. They say they do not do so with the hope of advancing prices as is the case with most combines. Two years ago, when the coopers took advantage of a shortage in stocks and held out for excessive prices, the result was that the following year found cement men, millers and others using bags and sacks, while the fruit growers adopted a standard box and agitated for the use of boxes instead of barrels for shipping fruit.

The cooperage manufacturers realize that if they supply barrels at reasonable prices they can restore their market, and it is with the purpose of reducing the price to the producer that the combine is being formed.

A meeting for this purpose was held recently in Toronto. About 20 manufacturers have signified their intention of forming a joint stock company. It is proposed to have a central office for buying and selling stock and output. In this way travellers would be dispensed with and the expenses materially decreased. Inspectors would be employed to see that high grade stock was supplied. An effort is being made to get others to join the combination. As soon as 80 per cent. of the output is under control the company will be incorporated.

Would Reduce the Tariff

The retail fruit and vegetable merchants of Toronto and London appeared before the Tariff Commission and asked for considerable reductions in the duty on certain products coming into Canada.

At Toronto the case was presented by Mr. F. C. Higgins, who pointed out that climatic conditions prevented Canadians from producing certain fruits and vegetables. In those products that are grown here he said that there is a natural protection in the perishability of the goods, and in the expense entailed in putting them on the Canadian market.

It was claimed that the existing duty of 25 per cent. on cranberries is prohibitive, and as the production in Canada is small the tariff should be reduced to $1.00 a barrel. At present it amounts to about $3.00. The present duty of two cents a pound on grapes was thought to be double what it should be. On strawberries the same duty was said to be excessive. In peaches it was asked that the duty of one per cent. per pound be reduced to half a cent from December 1 to August 15, and left as it is the remainder of the year.

Mr. Frank Simpson asked for a reduction on potatoes from 15 to 10 cents a bushel. It was thought the duty of 25 per cent. on tomatoes was ample. The duty on onions should be reduced from 15 to 10 cents a bushel. On cucumbers, asparagus, celery and cauliflower it was asked that the present duty be retained.

Mr. G. G. Steele presented the case at London, and said that the importations did not interfere with the fruit men. The following changes were asked for: Tomatoes, 25 cents a bushel instead of 20 cents and 10 per cent.; potatoes, reduction from 15 to 10 cents a bushel melons, reduction from 25 to 12½ per cent.; onions, reduction from 25 per cent. to 10 cents a bushel; cranberries, restoration of old duty of 30 cents a bushel; grapes, reduction from two cents to one cent a pound, or, failing that reduction, to one cent on grapes from Spain and California; peaches, reduction from one cent to half a cent a pound from December 1 to August 15.

ONTARIO HORTICULTURAL ASSOCIATION FORMED

The delegates, from the horticultural societies of the province, who met in Toronto last month at the time of the Ontario Horticultural Exhibition, decided to form a provincial organization to be known as the Ontario Horticultural Association. The objects of the association, as outlined at the meeting, are to bring the various societies of the province into closer touch with each other and to introduce more uniform and improved methods of work as well as to look after the interests of the societies generally.

The following officers were elected: President, W. B. Burgoyne, of St. Catharines; first vice-president, Major H. J. Snelgrove, of Coburg; second vice-president, Joseph Barker, of Kincardine; secretary-treasurer, H. B. Cowan, of Toronto; executive committee, R. B. Whyte, of Ottawa; R. W. Woodroofe, of Woodstock; C. L. Stevens, of Orillia; A. T. Armstrong, of Millbrook; W. Jeffers Diamond, of Belleville; A. Alexander, of Hamilton; H. R. Frankland, of Toronto; J. T. Rose, of Brantford, and Robt. Mann, of Orangeville. The president, first vice-president and secretary-treasurer were empowered to draft a constitution and to wait on the government to urge the adoption of legislation in the interests of the horticultural societies.

At the afternoon session of the convention Mr. W. B. Burgoyne described the excellent work that has been accomplished by the St. Catharines society during the past year. With a government grant of only $51 the society has distributed $8 and $9 for horticulture for every one that has been received from the government. The distribution of seed among the school children had been very profitable. A discussion of Mr. Burgoyne's remarks was entered into heartily by Messrs. Diamond, of Belleville; Barker, of Kincardine; Hunt, of Guelph, and other of the delegates. Several delegates said that they found the giving of The Horticulturist to their members had been productive of excellent results. The meeting then proceeded with the election of officers, which resulted as already given.

During the afternoon interesting addresses were given by Mr. Wm. Hunt, of Guelph, on The Care of Dormant and Semi-dormant Plants Throughout the Winter, an extract from which address appears in this issue, and by Mr. W. T. Macoun, of the Experimental Farm at Ottawa, who described some of the best features of the botanical garden at the farm. An outline of his paper will be published in The Horticulturist. The convention was considered to be a great success and the delegates appeared to be enthusiastic regarding the possibilities for good work that lie before the recently formed provincial association. A full report of the discussions will be published in the January issue of The Horticulturist.

Burlington

The annual meeting of the Burlington Horticultural Association was held at Freeman November 9th, with the president, A. W. Peart, in the chair. In his annual address Mr. Peart reviewed the work that the society had accomplished during the past season and outlined work for the future. The directors reported on the different classes of fruit grown in the neighborhood that had given the best results.

The report of the secretary-treasurer, and the auditors' report, showed that the society has a substantial balance on hand. The officers elected for the incoming year were: President, W. F. W. Fisher; first vice-president, J. S. Freeman; second vice-president, R. C. Fowler; secretary-treasurer, W. E. A. Peer; directors, D. Jardine, W. V. Hopkins, J. S. Freeman, H. T. Foster, R. C. Fowler, A. W. Peart, J. A. Lindley, W. E. A. Peer; auditors, H. T. Foster, W. H. Easterbrook; shipping committee, H. T. Foster, E. W. Lewis.—(W. E. A. Peer, secretary-treasurer.

Fruit Growers Provincial Convention

The annual meeting of the Nova Scotia Fruit Growers' Association will be held at Annapolis on December 12, 13 and 14. Among other questions the following will be discussed, Size of the Standard Barrel, Transportation, Cooperation, Spraying, and Improved Orchard Practice.

Secretary Barker, of Berwick, writes The Horticulturist that they are hoping for one or two good men from abroad, and expect to put on a good program of local men.

It has been decided to hold the winter meeting of The Pomological and Fruit Growing Society of Quebec at Richmond, Que., December 13 and 14. Secretary Wood, of St. John, Quebec, informs The Horticulturist that the program containing full information will be out before December 1.

The British Columbia Fruit Growers' Association will hold their annual meeting in Vancouver. The date has not yet been fixed. Secretary Brandrith, of Ladner, sends The Horticulturist the following list of speakers and subjects: T. F. Patterson, B. S. A., of Vancouver, Economic Entomology; H. H. Harris, sen., of Vancouver, Floriculture; J. A. Catherwood, of Hatzic, Freight and Express Service; W. J. Brandrith, of Ladner, Varieties of Fruit for the City Garden.

Keen Demand For Fruit

Cable reports from Woodall & Co., Liverpool, England, to their agent, Mr. Eben James, Toronto, show a firm market with a tendency to higher prices for apples for some weeks past. On November 22 this firm cabled: "Prospects most favorable, 8,000 barrels selling, market active and higher. Greenings 20 to 23 shillings, Baldwins 21 to 22 shillings, Spys 21½ to 24 shillings, Russets 20 to 24½ shillings, seconds 3 shillings less." The shipments from Canadian ports to date are 648,138 barrels, compared with 534,953 barrels for the same period last year.

Exhibitions of Work Enjoyed

Many visitors at the Ontario Horticultural Exhibition were pleased to find the Air Pressure Water Systems and Wallace Power Sprayers on hand in the display of Mr. W. H. Brand, of Grimsby, Ont. Regret was expressed that the absence of power shafting prevented Mr. Brand from giving a full demonstration of the capabilities of the "Junior" machine he managed to get into the basement of Massey Hall. As it was, he explained the system employed and gave as much of a practical exhibition of it as was possible when operating by hand, rolling in 15 to 20 pounds pressure in a very short time. This, of course, was purely air. It is a free agent and indeed a powerful one.

Mr. Brand's company have a variety of outfits of all sizes and capacities and for every purpose for which a power sprayer can be used, and they are well spoken of by Messrs. E. D. and J. W. Smith, Alex. Glover & Sons, of Winona; Wm. Orr, R. H. Dewar and C. C. Pettit, of Fruitland; Capt. Roberts, of Grimsby; Col. Ptolemy, Stoney Creek; E. G. Beckett and R. H. Lewis, of Hamilton; W. H. Dempsey, Fruit Experiment Station at Trenton; Mr. Macoun, of the Central Experimental Farm, Ottawa, Ont.; R. Jack & Sons, at Chateauguay Basin, Quebec, and others in Canada.

Over 3,000 of his Pneumatic Water Systems are in use throughout the world, some of them being in Canada. They are used by farmers of all descriptions, town residents who have no other pressure service to draw from, and by owners of high buildings wherein it is desired to further augment the fire protection by adding to the city service a private tank. Write Mr. Brand for information regarding either of these necessities. Their cost is quite commensurate with the articles. Address him at Jordan Station, Ont.

Proper Packing Important

Many fruit growers and shippers admit that before Canadian fruit can demand the best prices in Great Britain it must be properly packed. Many of the leading growers have adopted the Biggs system of packing that was shown at the recent Ontario Horticultural Exhibition in Toronto. The Biggs Fruit and Produce Co., of Burlington, Ont., make a specialty of supplying fruit growers with the very best appliances for the packing of fruit, including their press and packing table. The Biggs Co. also makes a specialty of shipping select fruit direct to any address in Great Britain without any extra cost.

A Capable Man Advanced

The Allan Steamship Company has secured the services of Mr. D. O. Wood, late with the Robt. Reford Steamship Company, as their western freight representative. Mr. Wood will be located in Toronto, and will have charge of the freight business for The Allan Company in western Ontario. A better man for this work than Mr. Wood would be hard to find. He has been with the Grand Trunk Railway over 20 years and a number of years with the Robt. Reford Co. The long experience gained by Mr. Wood when with these companies makes him well qualified to oversee the large shipments of apples, cheese, butter, etc., handled by this firm. The Allan line has completed a chain between the fruit growers in Ontario and the consumers in Great Britain and a better man to extend the business of the company would be hard to find. This firm purposes placing several new boats on their line and will devote special attention to the export fruit trade.

A Correction

In the article Spraying Competition Challenge that appeared in the November issue of The Horticulturist, the omission of "as is" made Mr. Brand say blue vitriol and white arsenic were not soluble in water. The sentence should have read "In doing this it carries with it such components as Paris green, which is not perfectly soluble in water, as is blue vitriol, white arsenic, etc., but remains in a very fine but heavy powder."

Again, in the paragraph regarding how to judge as to which machine produced a proper spray the addition of the words "those who" slightly changed the meaning. This sentence should have read "The way to judge which of these machines will best perform the work is to be governed by verdicts of users of them, or see both makes in actual operation."

Fruits, Vegetables and Tubers

Great caution should be exercised in the selection of varieties, and as a rule it is not wise to purchase novelties. However,. Canadian growers know that new specimens introduced by Stone & Wellington are worth having because they have been thoroughly tested before being offered to the public.

Three recent introductions have proven to be adapted to Canadian conditions. The Maynard plum, Burbank's greatest introduction, has withstood the hardships of our winters; the Ideal asparagus, a French variety, is far ahead of other varieties, producing large crisp stalks, and the Gold Coin potato, a Vermont variety, was the best yielder tested at the Central Experimental Farm, Ottawa, averaging 554 bushels per acre.

Steel Grape and Fence Posts

An attractive exhibit at the recent Ontario Horticultural Exhibition was a display of steel grape posts and fence posts, by The Canadian Portable Fence Co., Limited, of Toronto. There is a growing demand for a steel post, and this enterprising company did not hesitate, but immediately set to work to design their steel grape posts according to the ideas of the best known grape growers of Canada.

The grape posts are made on much the same lines as the well-known steel fence posts, that have made for the company an enviable reputation in the fence industry. The anchor, or end posts, are rigid steel trusses, with means of tightening and adjusting tension on wires. The stationary anchorage is recommended, although the portable, being simpler to set, is frequently demanded. The line posts consist of a single angle steel upright, driven about two feet into the ground. This saves the digging of a post hole. The posts being only one and one-half inches wide take up practically no space—a matter of great importance for plowing, spraying, and collecting fruit.

The company is prepared to sell these grape posts direct to the fruit growers. Inquiries should be addressed to their head office, foot of Jarvis street, Toronto. They have every facility for turning out these posts rapidly and economically, and solicit the patronage of the Canadian fruit grower for a home production invented in and made in Canada.

How to Grow 'Mums

Every lover of flowers is anxious to have a few chrysanthemums. Much information of value to those interested in the culture of this beautiful plant is to be found in a book prepared by Arthur Herrington entitled The Chrysanthemum. This work is worthy of special perusal by amateurs. It includes the

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history of the plant and a practical treatise on propagation, suitable soils, watering, cultural methods and every detail connected with producing good plants. Illustrations are given to show cuttings ready for planting and, later, ready for the first potting. Crown and terminal buds are fully discussed and well illustrated. The value of fertilizers is treated and the difference between "fed" plants and those grown under ordinary conditions illustrated.

A chapter is devoted to the preparation of plants for exhibition and judging. Specimens of bush and standard plants are shown and their culture fully given from propagation in December to the fully developed plant. Commercial culture, growing seed and hybridizing, and insect and fungus pests, with their treatments, are carefully described.

Those interested should write to Morang & Co., Limited, 90 Wellington street west, Toronto. The price of this book, well bound and containing 32 illustrations, is 50 cents.

Exhibit Attracted Attention

The education features of the recent Ontario Horticultural Exhibition in Toronto, were greatly appreciated by the large number of fruit growers who were present from all parts of Ontario. Among the many exhibits was that of the Little Giant Sprayer from Port Dover, Ontario. Mr. Perkins, who was in charge, was a busy man, explaining to interested spectators the many points in this sprayer that are not contained in any other machine. Among the interested visitors to this exhibit were Hon. Nelson Monteith, Hon. Mr. Fielding, and other prominent persons, who expressed themselves as being pleased with the simplicity of operation and the many excellent features the Little Giant Sprayer possesses.

Mr. Perkins intimates that a number of orders were secured for spring delivery, and wishes to advise intending purchasers to place their orders at once as their doing so will enable the manufacturers to have the machines delivered in time for use in the early spring season. Delays in delivery, when the season opens up rapidly, are annoying and costly. A large staff will be kept busy during the winter manufacturing Little Giant Sprayers, and all orders placed will receive prompt attention.

The basket section in the trade exhibits at the recent Ontario Horticultural Exhibition in Toronto was ably represented by the Oakville Basket Co., which made an extensive display of the articles the firm manufactures for the fruit trade. The high quality of workmanship evident in the samples shown indicates the reason why this firm stands at the top of the basket manufacturers of Canada.

Fruit growers who heard Mr. A. N. Brown, of Wyoming, Delaware, talk on spraying, will be interested in an advertisement that appears in this issue for Kil-o-Scale. Mr. Brown stated that this insecticide has given entire satisfaction in treating San Jose Scale in Delaware.

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I regret my subscription has been so long overdue. To prevent it happening again, I enclose check for $5, paying up to 1908.—(Mrs. P. E. Henry, Toronto, Ont.

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Your name will not be mentioned to those to whom you refer us, and no responsibility will attach to you in any way.

The Grape Vine will be sent to you, free of any expense, and if this were not a bone-fide offer we would not be permitted to print it here.

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